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PART FIRST.

ORIGINAL COMMUNICATIONS.

ART. I.—*Is Muscular Motion the Cause of the Production of Urea?* By JOHN C. DRAPER.

IT is proposed to show, that the amount of urea excreted in the urine is not influenced by muscular motion, as is generally supposed by physiologists.

We shall endeavor to prove this: 1.—By direct experiments on the urine of persons in different conditions of motion and rest. 2.—By an examination of the diurnal and nocturnal variations in the amount of urea voided, which variations we believe are now for the first time recognized.

We shall offer reasons for concluding that the differences in amount of urea secreted are to be attributed to the influence of food.

Is the Urea in Urine Due to Muscular Motion?—The first step in the solution of such an inquiry as the above, is the choice of some reliable process by which analyses determining the amount of urea in various samples of urine, may be made.

The process employed in the following experiments consists essentially in the decomposition of the urea by nitroso-

nitric acid, and then determining the carbonic acid produced by means of hydrate of baryta.

Next, we have to settle upon some standard with which the results obtained in our experiments may be compared. The one chosen as being the most convenient, is the total quantity of urea passed in twenty-four hours, a very small amount of exercise being taken. The diet being mixed, and as nearly as possible the same in amount each day.

The analyses given in the following table fulfill these conditions, and, with the exception of the eleventh, twelfth, and thirteenth, were all obtained from the same individual. In addition to the urea, the solid residue, that is the solid material left after the evaporation of the water contained in the excretion, was also determined.

Average daily amount of motion, 3 miles.			
Analysis.	Urine.	Solid Residue.	Urea.
	In Grammes.	In Grammes.	In Grammes.
1	754·000	44·488	23·649
2	1227·000	52·768	26·030
3	1153·000	54·202	26·034
4	1042·000	60·456	31·902
5	1160·000	60·825	31·008
6	990·000	56·493	27·567
7	1737·000	66·874	31·062
8	1042·000	53·943	26·551
9	997·000	55·288	27·616
10	1079·000	54·513	23·873
11	871·000	55·598	25·271
12	775·000	51·440	27·323
13	743·000	51·023	26·816
14	974·000	52·718	24·476
15	1462·000	59·838	28·424
16	768·000	50·120	24·394
17	1595·000	62·096	29·232
18	1536·000	57·838	28·621
Total for 18 days, 19905·000		1000·521	489·849
Mean for 24 hours 1106·		55·584	27·213

If we compare the urea with the solid residue in the manner proposed by Dr. Simon, the result of these analyses is the same as of those given by Berzelius, Lehmann, and others.

1000 Parts of Solid Residue contain according to	
Berzelius	451· of Urea.
Lehmann	490· " "
Marchand	492· " "
Above Analyses	490· " "

Our standard, therefore, is as follows, in grammes.

Urine.	Solid Residue.	Urea.	1000 of S. R. contain of Urea.
1106.	55·584	27·213	490·

We may now proceed to determine: 1.—The daily quantity of urea excreted in absolute rest. 2.—That, during violent and sudden muscular action.

The Amount in Absolute Rest.—In order to obtain this, I analysed the urine of the patient whose history is given below.

C. Marshall, aged 22, a Virginian by birth, had his leg broken by an accident on the Panama Railroad, as he was returning home; ten days after the accident he entered the New York Hospital, where he was treated. Nothing unusual occurred; and, at the expiration of eight weeks, he was discharged, cured. Diet was mixed, being the usual hospital allowance.

The following samples of urine were obtained after three weeks of confinement, and, therefore, represent the urine of absolute rest.

Analysis.	Urine.	Solid Residue.	Urea.
	In Grammes.	In Grammes.	In Grammes.
19	871·	55·598	25·271
20	775·	51·440	27·323
21	743·	51·023	26·816
Total for 3 days,	2389·	158·061	79·410
Mean for 24 hours	796.	52·687	26·470
1000 of Solid Residue contain 502 parts of Urea.			

Comparing these results with our standard we obtain the following table:

	Total Urine.	Solid Residue.	Urea.	1000 S. R. cont. of Urea.
Standard	1106·	55·584	27·213	490·
Absolute Rest	796·	52·687	26·470	502·

From this we see that there is a small diminution in the total quantity of solid residue and urea, excreted in a state of absolute rest, but the solid residue is richer in urea.

The Amount of Urea Excreted in Violent Muscular Action.—For the purpose of determining this, I walked at different times a distance of thirteen miles on a level causeway, the greater portion being performed at the rate of four and a-half miles an hour. The pulse in each trial rising to above one hundred. Diet same as in the standard.

Average daily amount of motion, 13 miles.			
Analysis.	Total Urine.	Solid Residue.	Urea.
22	1042·	53·943	26·551
23	768·	50·120	24·394
Total for 2 days,	1810·	104·063	50·945
Mean for 24 hours,	905·	52·031	25·472
1000 of Solid Residue contain 489· parts of Urea.			

Comparing this with our standard we obtain the following table :

	Urine.	Solid Residue	Urea.	1000 of S.R. cont. of Urea.
Standard.....	1106·	55·584	27·213	490·
Violent Motion...	905·	52·031	25·472	489·

Which demonstrates that when sudden and violent exercise is taken, the total amounts of solid residue and urea are diminished, while the proportion of urea to solid residue remains about the same.

Now if the urea in urine was altogether the product of muscular disintegration, the conditions which prevailed in experiments 22 and 23, would have greatly increased its

amount, but, instead of this, we find that in the same individual, and under otherwise the same circumstances, violent muscular action does not increase the total quantity of urea passed in a day.

Again, in a state of absolute rest, if the urea was owing mainly to the disintegration of tissue from exertion, we should expect to find a comparatively small amount of that substance present, and this quantity would represent the destruction of the muscular tissue engaged in carrying on the process of organic life. But, instead of this, we find from experiments 19, 20, and 21, that in rest as perfect as can be obtained, there is no great diminution in the total quantity of urea excreted, and that the solid residue left after the evaporation of the water, is actually richer in urea.

We therefore conclude that violent and brief muscular action does not exercise any great influence on the urea in urine. Nor is it probable that that substance has passed out of the system through the skin, as an ingredient of the sweat. It is also equally improbable that it has escaped by way of the intestinal canal, for urea is not a normal ingredient of fæcal matter, except when the kidneys are exsected, or their function is in some way disturbed. But we are supposing that an excess of urea has been formed, and the reason we give for this supposition is, that if such violent action were continued for a great length of time, the muscular structures would greatly decrease in weight. And as urea contains a large quantity of nitrogen, which is also a characteristic component of muscle, we therefore say that urea represents the disintegration of muscle. But may it not be that the nitrogen contained in the destroyed tissue has escaped directly through the lungs, without entering into composition with other substances. This is not all improbable, for the experiments of MM. Regnault and Reiset on respiration have shown that warm-blooded animals, under the usual circumstances in which they exist, excrete by means of their lungs an amount of nitrogen equivalent to from $\frac{1}{100}$ to $\frac{1}{50}$ of the oxygen consumed.

It has been supposed from the experiments of Dr. Simon, that violent exercise increased the amount of urea, but if we examine his analyses as they are given in his "Chemistry of Man," it will be seen that as the amount of urine is not given, we have no means of knowing whether the total quantity of urea was increased or not. Indeed, it is more probable that the apparent increase is owing to the loss of water by evaporation. The same objection is to be urged against the analyses of Dr. Percy.

Lehmann gives in his work two experiments on the influence of exercise on the quantity of urea. In these, severe bodily exercise increased the amount from thirty-two grammes to thirty-six in twenty-four hours on one occasion, and to thirty-seven on another. It is true that in this case we have an increase, but it is not more than analyses made from day to day would show.

We, therefore, conclude from the experiments thus far made, that sudden and violent exercise does not increase, to any extent, the amount of urea in urine.

As it is evident that exercise does not exert any material influence on the fluctuations of urea, we must seek for other causes, and among these is diet, which has been shown by the experiments of Lehmann, to exert a most notable influence, as may be seen in the following table:—

	Total Urine.	Solid Residue.	Urea.
Animal Diet	1202·	87·44	53·198
Mixed "	1057·	67·82	32·489
Vegetable "	909·	59·23	22·481
Non-Nitrogenized "	——	41·68	15·410

From this we observe that in an animal diet there are nearly four times as much urea excreted as in a non-nitrogenized one. And if we compare it with the solid residue, we find that in a non-nitrogenized diet, the solid residue contains far less urea than in an animal one.

Comparing these results with those obtained from the experiments given on exercise, we see how great the influence

of diet is, and hence we should be led to suppose that there must be a considerable difference in the amount of urea excreted during the day, compared with that excreted in the night. Accordingly, we come to the second inquiry, viz.: What are the semi-diurnal variations, and what is the influence of rest and motion on them?

Of the Semi-Diurnal Variations.—These have not as yet been noticed by any one who has experimented with urine. They are very marked and uniform in their occurrence, and much more apparent than the fluctuations caused by exercise. In order to show them, the following analyses of urine which was passed during the day, compared with those of

Average daily amount of motion, 3 miles.						
	Night Urine.			Day Urine.		
Anal.	Urine.	Solid Residue	Urea.	Urine.	Solid Residue.	Urea.
27	....	.....	.....	678·	35·802	17·448
28	479·	25·023	13·560	....	.....	.....
29	....	.....	.....	442·	26·406	11·985
30	547·	30·087	15·582	....	.....	.....
31	....	.....	.....	627·	31·618	14·112
32	413·	22·325	12·439	....	.....	.....
33	....	.....	.....	473·	26·022	10·464
34	606·	28·491	13·409	....	.....	.....
35	....	.....	.....	561·	33·709	14·216
36	310·	21·889	11·055	....	.....	.....
37	....	.....	.....	413·	26·809	14·426
38	362·	24·631	12·897	....	.....	.....
39	....	.....	.....	443·	31·492	16·800
40	300·	19·531	10·016	....	.....	.....
41	....	.....	.....	354·	22·000	11·612
42	620·	30·718	12·864	....	.....	.....
43	....	.....	.....	516·	30·505	13·371
44	946·	29·333	15·053	....	.....	.....
45	....	.....	.....	502·	30·161	13·709
46	266·	19·959	10·685	....	.....	.....
47	....	.....	.....	620·	34·774	14·912
48	975·	27·322	14·320	....	.....	.....
49	....	.....	.....	916.	33·000	15·694
50	620·	24·833	12·927	....	.....	.....
Total	6444·	304·142	154·807	6545·	362·298	168·749
Mean	537·	25·345	12·900	545·	30·191	14·062
1000 of Solid Residue contain 509· parts of Urea.				1000 of Solid Residue contain 466· parts of Urea.		
Difference between the percentage of Urea in the Solid Residue of the day and night 43· in 1000.						

the urine voided in the subsequent night, are given. The day counted from 7 A.M. to 7 P.M., when the night period began.

Diet in these experiments was mixed, and about the same in quantity each day. A moderate amount of exercise was taken.

These analyses demonstrate that the total amounts of solid residue and urea passed in the course of the day are much greater than those voided during the night; while the solid residue of the urine excreted in the night is richer in urea than that of the day.

These results are, doubtless, owing to the influence of diet; for, during the day, food having been ingested, the elimination of the excess begins to take place almost immediately, thus producing an increase in the amount of urea; while, during the night, though the total quantity of urea excreted is less, yet it forms a larger portion of the solid residue. This may be attributed to the fact, that in the day a greater amount of phosphates and sulphates being formed, these, with the chlorides and other salts taken in at the same time, diminish the proportion of urea to solid residue.

If this explanation is the true one, we should expect to find that in absolute rest the amount of sulphates, etc., being less, the difference between the percentage of urea in the solid residue of the day, compared with that of the night, would also be less. But if violent muscular action was undergone, these differences should become greater on account of the increase of the amount of sulphates, etc.

In order to demonstrate that this is so, the following analyses are given.

The Influence of Rest on Semi-diurnal Variations.—For the solution of this problem the urine of the patient Marshall, whose history is given above, was used. Analyses of the urine of three days were made.

Night Urine.				Day Urine.		
Anal.	Urine.	Solid Residue	Urea.	Urine.	Solid Residue.	Urea.
51	....	.....	.....	561·	33·709	14·216
52	310·	21·889	11·055	....	.....	.....
53	....	.....	.....	413·	26·809	14·426
54	362·	24·631	12·897	....	.....	.....
55	....	.....	.....	443·	31·492	16·800
56	300·	19·531	10·016	....	.....	.....
Total	972·	66·051	33·968	1417·	92·010	45·442
Mean	317·	22·017	11·322	472·	30·670	15·147
1000 of Solid Residue contain 514· parts of Urea.				1000 of Solid Residue contain 493· parts of Urea.		
Difference between the percentage of Urea in the Solid Residue of the day and night 21· parts in 1000.						

From this we see, that in absolute rest the difference between the percentage of urea in the solid residue of the day compared with that of the night is only twenty-one parts in one thousand; while, when a small amount of exercise is taken, it is forty-three parts in one thousand; this is what we should have expected to find, if the explanation we have given of this variation was the true one.

The Influence of Violent Exercise on the Semi-Diurnal Variations.—On the days on which these samples of urine were passed, the same amount of exercise was taken as in the former experiments on violent muscular action.

Average daily amount of motion, 13 miles.						
Night Urine.				Day Urine.		
Anal.	Urine.	Solid Residue	Urea.	Urine.	Solid Residue.	Urea.
57	....	.....	.....	627·	31·618	14·112
58	413·	22·325	12·439	....	.....	.....
59	....	.....	.....	502·	30·161	13·709
60	266·	19·959	10·685	....	.....	.....
Total	679·	42·284	23·124	1129·	61·779	27·821
Mean	239·	21·142	11·562	564·	30·889	13·910
1000 of Solid Residue contain 546· parts of Urea.				1000 of Solid Residue contain 450· parts of Urea.		
Difference between the percentage of Urea in the Solid Residue of the day and night, 96· parts in 1000.						

On examining the result of these analyses, we find that the difference of the percentage of urea in solid residue is as much as ninety-six parts in one thousand, thus giving additional proof that our supposition concerning the cause of these variations is the true one; and by comparing them together, we obtain a table, which is almost an index of the amount of exertion undergone.

Table of apparent Variations of percentage of Urea in Solid Residue of day and night in different degrees of Motion.

Absolute Rest	21 parts in 1000
Moderate exercise	43 " " "
Violent "	96 " " "

The only other cause to which these fluctuations could be attributed, would be variations in the amount of urea itself. Now, if this was the case, there would be more urea excreted in the night than in the day. But if we examine the following table we find the opposite condition holds.

Table of Variations of total Amount of Urea passed in the day and in the night, during different degrees of exercise.

	Day Urea.	Night Urea.
Absolute Rest	15·147	11·332
Moderate Exercise	14·062	12·900
Violent "	13·910	11·562

We, therefore, conclude, that the fluctuations of the percentage of urea in the solid residue of the day compared with that of the night, are due to the excretion of the phosphates resulting from mental action, and to the sulphates formed during muscular activity.

We have also supposed that the cause of the increase of the total amount of urea during the day was due to the ingestion of food. In support of this, we give the following analyses:—

In these, the twenty-four hours are divided into five periods. The first four consist of four hours each, and extend from 6.30 A.M. to 10.30 P.M.; while the fifth is eight hours long,

and extends from 10.30 P.M. to 6.30 A.M. As regards the time at which meals were taken; breakfast, a light meal, at 7 A.M.; dinner, constituting the main meal, at 3 P.M.; and tea at 7 P.M. A moderate amount of exercise was taken in the morning:

First Period, from 6.30 A.M. to 10.30 A.M.			
Analysis.	Total Urine.	Solid Residue.	Urea.
61	221·	11·754	5·963
62	162·	9·270	4·312
63	177·	8·516	3·763
64	177·	10·468	5·000
Total	737·	40·008	19·038
Mean	184·	10·002	4·759
1000 of Solid Residue contain 475· parts of Urea.			

Second Period, from 10.30 A.M. to 2.30 P.M.			
Analysis.	Total Urine.	Solid Residue.	Urea.
65	280·	12·782	6·001
66	147·	7·688	3·338
67	236·	10·882	4·552
68	147·	8·427	4·188
Total	810·	39·779	18·079
Mean	202·	9·945	4·519
1000 of Solid Residue contain 454 parts of Urea.			

Third Period, from 2.30 P.M. to 6.30 P.M.			
Analysis.	Total Urine.	Solid Residue.	Urea.
69	177·	11·266	5·484
70	133·	9·448	4·335
71	214·	12·220	5·797
Total	524·	32·934	15·616
Mean	175·	10·978	5·205
1000 of Solid Residue contain 473 parts of Urea.			

Fourth Period, from 6.30 P.M. to 10.30 P.M.			
Analysis.	Total Urine.	Solid Residue.	Urea.
72	184·	10·534	5·629
73	192.	10·571	5·417
Total	376·	21·105	11·046
Mean	188·	10 552	5·523
1000 of Solid Residue contain 523 parts of Urea.			

Fifth Period, from 10.30 P.M. to 6.30 A M.			
Analysis.	Total Urine.	Solid Residue.	Urea.
74	295·	14·489	7·931
75	221·	11·754	7·022
76	340·	13·772	8·347
Total	856·	40·015	23·300
Mean	285·	13·338	7·766
1000 of Solid Residue contain 582 parts of Urea.			

If we collect together the results furnished by these analyses, we obtain the following table:—

	Period.	Number of hours	Total Urine	So'd Residue.	Urea.	1000 S. R. cont. of Urea.
1	From 6,30 to 10·30	4	184·	10·002	4·759	475·
2	" 10,30 " 2·30	4	202·	9·945	4·519	454·
3	" 2,30 " 6·30	4	175·	10·978	5·205	473·
4	" 6,30 " 10·30	4	188·	10·552	5·523	523·
5	" 10,30 " 6·30	8	285.	13·338	7·766	582·

From this table we see that the period of the day at which the greatest amount of urea is excreted, begins about dinner, and continues for a time after tea. The period at which the next greatest amount is excreted is just after breakfast, while during the eight night hours far less is excreted than during the same time in the afternoon.

We therefore conclude that, as the ingestion of food can exercise so rapid and marked an influence on the quantity

of urea, it is the cause of the increased excretion of that substance during the day.

Reviewing the results arrived at, we conclude finally:

CONCLUSIONS.

1.—Exercise does not increase to any extent the amount of urea in urine.

2.—The ingestion of food during the day causes a greater amount of urea to be excreted at that time than is excreted during the night.

ART. II.—*Fibrous Tumor of the Uterus Successfully Removed by Abdominal Section, and Recovery of the Patient.* By DR HERFF, of San Antonio, Texas; Reported by J. D. B. STILLMAN, M.D., Member of the N. Y. Pathological Society, late Physician at the Demilt Dyspensary, etc.

THE following case came to my knowledge while on a tour through Western Texas, and deeming it one of extraordinary interest to the profession, I succeeded in obtaining from the accomplished Surgeon who operated, a brief statement of it.

Mrs. Ring, of Port Lavaca, aged 43, twenty years ago perceived a tumor in the abdomen, which increased slowly, and for a long time caused her no considerable suffering or any derangements of the urino-genital functions. She had during the time several living children, as well as a number of miscarriages. During the last few years, however, she suffered much from pressure upon the rectum and bladder, as well as prolapsus uteri. Menstruation became scanty, and fluor albus very troublesome. She had at no time dysmenorrhœa neuralgia, or menorrhagia. In the fall of 1852, after lifting a heavy burden, she felt as if something in her abdomen had given way; after which she was laid up for a week or two, with severe pains in the abdomen, accompanied with fever. From that time she suffered almost constantly with great pain in the region of the tumor, over which, about four months before her application to Dr. Herff, several small abscesses appeared. She had suffered during that time

from hectic, night sweats, diarrhœa, and was so far reduced as to be unable to stand alone.

Present Condition.—The abdomen was enlarged from the navel to the os pubis, to about the size of one in the sixth month of gestation; the enlargement, however, was not in the mesian planis, but more to the left side. The tumor was slightly movable laterally, and adherent to the abdominal walls, which were thin from extreme emaciation. The fistulous openings were three in number on the left side of the linea alba, and admitted the probe to the depth of no more than one-fourth of an inch, from their small size and sinuous course; the discharge from them was sero-purulent. The vagina was much relaxed, the cervex uteri inclined to the right side, and very low down, and the os very sensitive.—The use of the uterine probe was objected to by the patient. The female catheter entered without difficulty into the bladder. The finger introduced into the vagina and rectum could readily feel the tumor through the walls and spatium Douglassii.

Diagnosis.—Encysted tumor of the left ovarium with inflamed internal membrane of cyst; adhesions to the peritoneum; suppuration, and perforation of the abdominal walls.

The diagnosis was chiefly founded on the improbability of the patient's having children, with such a tumor in the womb; on the lateral position; slow growth; and perforation to the surface. Dr Herff thought that had he been permitted to use the uterine probe, he would have immediately discovered the connection of the tumor with the uterus itself. The patient insisted upon an operation, and was full of confidence in its success. His intention was to make a small incision in the supposed cyst, to empty it of its contents, and then to pull out the cyst itself without opening into the abdominal cavity, and remove it with the knife or ligature.

The operation was performed in the presence of Drs. Schloeman, Morgan, and Wette, of San Antonio, the husband, and some friends of the patient, on the 12th of August, 1854. The patient was put under the full effects of chloroform, and

a small incision made in the linea alba. The incision led to a firm tumor which had a somewhat bony feel. The peritoneum was adherent to the whole anterior part of the tumor, and only separable with difficulty from it. The incision was enlarged to the length of five inches, by which means the doctor could introduce his hand behind the tumor, and free it from all its adhesions. It now appeared that the tumor originated in the substance of the uterus, which was enlarged to the size of a child's head at birth. There were two or three pseudo-membranaceous connections with the mesenterium of the colon, which were separated with the scissors. The tumor was detached from the uterus by the scalpel-handle and fingers. Very little hemorrhage followed, but a cavity was left in the body of the uterus large enough to admit the fist, but it did not open into the cavity of the uterus; it did not close by contraction as wounds in that organ are accustomed to do, after the Cæsarean operation, and into which the bowels would have inevitably fallen. It became necessary, therefore, to stitch the wound in the uterus with four strong sutures of silk, which were led out at the lower angle of the abdominal wound. The latter was closed by twelve sutures and alternate strips of adhesive plaster. The time occupied was forty minutes, during which time the patient was kept under the influence of chloroform.

The tumor was nearly round, four inches in diameter, of a very hard, fibrous structure, without any elements of muscular fibre. The portion connected with the peritoneum was covered with lamina of phosphate of lime, the twentieth of an inch in thickness, and bearing a close resemblance to spiculæ of bone. Weight of tumor four pounds and three ounces.

After the operation the patient complaining of severe pain in the abdomen, ½ gr. morph. was administered. Cataplasms of slippery elm were kept upon the abdomen for three days. No other nourishment was allowed than rice water. During the first twenty-four hours the patient was kept under the influence of opium, of which she took one grain every three hours. The second day she had no fever or pain. In the

evening one grain of opium. On the third day there was administered of oleum ricini ʒss, by which a natural evacuation was obtained. On the fourth day the cataplasms were discontinued, and a part of the stitches removed, the remainder of which were removed on the fifth day. The abdominal wound was entirely healed, except the lower corner, which was kept open by the passage of the ligatures in the uterus. Four weeks after the operation these threads were withdrawn by the assistance of a small exploring trochar, through which the threads were passed, and traction made upon them, pushing at same time with the trochar, to confine the traction to the point of attachment with the ligature.

Five weeks after the operation the patient left in the mail coach for her home, a journey of forty-eight hours. She has been since then, a period of fifteen months, in good health, and is now superintending a large hotel, and only suffers from a hernia in the linea alba, which is easily kept back by an elastic bandage.

The interest which Ovariotomy and kindred operations have excited for some years past, and the discussions which they have elicited, give to this case of Dr. Herff's a value extraordinary, even among the extraordinary operations with which it is classed.

In Ovariotomy it has been usual to make a preliminary exploratory operation, and when a solid tumor has been found to desist from its performance. Up to 1844, every attempt at their removal, six in number, proved fatal. Our countryman, Dr. Atlee, of Philadelphia, has the credit of performing the first successful removal of a tumor attached to the fundus of the uterus, in which the patient recovered.

This was a pedicular tumor, and the pedicle was first ligated before excision. He operated again successfully in 1849 for the removal of a tumor of similar character, and probably in the same manner, though the details of the case are not published.*

* See *Atlee's Analysis of cases of Ovariotomy*, in the Transactions of the American Medical Association, vol. iv.

Dr. Herff's is the third case, and this in some respects is unique. Enlarged uterus and adhesions were both present, and the sessile attachment of the tumor precluded the use of ligatures previous to removal, and he dissected it away without the knife. It may be well for me to state that Dr. Herff is a Russian by birth, but now a citizen of the United States, and a resident for six years past in the city of San Antonio, Texas, where he is held in the highest esteem by gentlemen of the profession and the public, and has gained for himself a surgical reputation second to none in the State. The successful result of this case must be ascribed in no small degree to the extraordinary salubrity of the climate, which is such as to give a larger average of recoveries, Dr. H. tells me, than is usual in more humid climates.

ART. III.—*Epidemic Dysentery as it prevailed in the village of Cold Spring, during the years* 1854-5, *with Comparative References to the History of the Disease as it has prevailed epidemically in other localities.* By FREDERIC D. LENTE, M.D., Surgeon to West Point Foundry.

DYSENTERY became epidemic in this village about the 1st of August, 1854, and continued until October 24th, when the last case occurred. Previous to August 12th, when the first intimation of an epidemic manifested itself, many mild cases, easily controlled by treatment, had occurred; but as no notes of these were kept, they are not included in this paper. In 1855, the epidemic tendency of the disease also manifested itself about the 1st of August, and continued until the middle of October, though a few straggling cases occurred as late as the 1st of November.

It is difficult to assign any local cause for the occurrence of this epidemic; for the successive seasons in a locality usually remarkably exempt from the disease, with the exception of mild sporadic cases. A drought prevailed during the summer of 1854, more severe and protracted than has occurred in this place for many years. The springs, which usually furnish a superabundance of the finest water, were

much affected; to this cause, some non-professional persons here were inclined to attribute the disease. This drought continued until somewhat late in winter, and the disease also continued unusually late; cases having occurred after two severe frosts, and as late as October 24th, as above mentioned. The summer of 1855 was also an extraordinary one, meteorologically speaking. First, on account of the lowness of the temperature; there was not a really warm summer's day here during the month of August, generally one of our hottest months. During the earlier part of the summer, there were a few intensely hot days, three or four at a time, immediately succeeded by weather more suitable for early spring or late autumn, rendering ordinary summer clothing uncomfortably cool. Considerable quantities of rain fell during the early part of the summer, followed by a drought of short duration in September; after which, rain again fell in abundance.

We do not pretend to ascribe the origin of the epidemic to meteorological causes, much less to particularize these causes. But the atmospherical and terrene conditions prevalent during each season that the epidemic has visited us, though widely different, were such as to render the system not unlikely to be affected by hepatic congestion, and intestinal inflammation. During the first season, the epidemic was mostly confined to the village, and, for the first half of it, almost exclusively to one street, that nearest the Hudson River, where almost every house had a case, and some of them two or more.

During the season which has just passed, the disease commenced in the village, but soon spread into the surrounding country, where it prevailed extensively.

For several years past, the village has been remarkably exempt from *malarious* diseases. Bilious remittents being very uncommon, and intermittents not epidemic, and easily controlled. In 1854, for about two weeks, cases of intermittent fever were quite prevalent, and, during the summer which has just passed, the disease was more common than

it has been for some years, but mostly confined, during both seasons, to certain localities, which were rather less visited by dysentery than other parts of the village; a fact, which, so far as it goes, indicates no malarious element in the causation of the epidemic, nor were any of the fevers complicated by dysentery, nor succeeded by it, such complications, according to writers on the subject, being not unfrequent. Two cases of acute hepatitis, a disease which had not previously fallen under our notice here during a residence of four years, one in a child six years old, the other in an adult, occurred during the past season. The first occurred in a crowded room, where two severe cases of dysentery still existed; the other, a very severe and protracted case, occurred when no dysentery had existed; both cases terminated favorably.

The whole number of cases under treatment, of which notes were taken, during the two seasons, was one hundred and thirty-nine. Of these, thirty-six were adults, and forty-three children,* whose average age was a little less than three years. With very few exceptions, the adults were in the prime of life, from twenty to forty-five years.

Very careful notes of most of these cases, of all those that were most severe and protracted, were taken, generally at two or three different periods during the day and night, sometimes oftener. Only the general results, however, will be given in this paper, and no cases introduced in full, except a few which may be necessary to illustrate the effects of a particular remedy. Among the whole number of cases (139) there were *six deaths*, or 4·31 per cent. Three of these occurred among adults and three among children; making the percentage of the former about 3·00 per cent; for the latter about 7·00 per cent. Of the three cases which terminated fatally among adults, one was *fifty-nine* years of age, with a constitution completely broken down by long years of dis-

* Many more cases besides these presented themselves for treatment, but, although presenting all the characteristics of dysentery, were not so severe as to cause confinement to the house and bed, and of such cases no notes were taken.

sipation and intemperance, and whose case was complicated by delirium tremens; another was *seventy-nine* years old, residing several miles in the country, rather uncontrolled by those having charge of him, and who could not be visited but once a-day, or sometimes once in two days. If we reject those two cases, almost necessarily fatal under the circumstances, the percentage of deaths for adults would be one per cent. Of the three deaths among children, one occurred in a child ten months old, within three days from the commencement of the attack, of cerebral disease, which quickly supervened upon the intestinal affection.

We will first describe the symptoms and treatment of the disease as it appeared among adults. The disease invariably assumed the *sthenic* form; though, in several cases, a subacute variety of this form; in no instance, even among the severe and protracted, and the fatal cases, running into the *typhoid*, *gangrenous*, or *putrid* varieties described by several writers. The cases were generally pretty uniform in their progress and characteristics, with the exception of their duration, in which they widely differed. Some, which appeared to assume, at their inception, a very violent form, rapidly yielding to treatment, and convalescing in a few days. Others, commencing mildly, and giving every indication of a speedy cure, proved, in the end, exceedingly troublesome and uncontrollable. This was the case both among adults and children. Most of the patients, when attacked, were in full health, and at their work, and, in most cases, continued to labor until the pain or the debility produced by the complaint, compelled them to desist. In a large majority of cases, also, they had themselves applied remedies of various kinds, before calling in medical advice; these remedies, for the most part, consisting of castor oil, sometimes in repeated doses, sometimes combined with laudanum; sometimes the latter was used alone. In some cases, "hot drops," and in others, "burnt brandy," etc., was employed. By all these, the disease was generally aggravated; though, possibly many cases, which did not come under our notice at all,

were cut short by these remedies, as will sometimes happen. Most of the cases, therefore, had had the symptoms of dysentery for several days, ranging, according to the notes, from two days to two weeks or more, generally about four days, before applying for medical aid, some of them in a violent form. In stating the *duration* of the disease, then, it will be understood that the time noted refers to the period elapsing between the date at which the regular treatment of the case commenced and the date of convalescence, at which latter date, or, in many cases, a day or two previous to this, all medicines had been discontinued. Among the particular class, to which most of my cases belonged, being operatives in the foundry, for the most part laborers or "helpers" of the mechanics, it is not always easy to get reliable information as to the duration or previous history of their ailments.

During the season of 1854, there were fifty-seven adults and nine children under treatment; the average duration of treatment for adults was $6\frac{1}{4}$ days, for children, $14\frac{1}{2}$. In 1855, there were thirty-nine adult cases, and thirty-four children; the average for the former was $6\frac{2}{3}$ days, and for the latter 11 days; making the general average for both years,—for adults about the same, and for children, $12\frac{3}{4}$ days. Only two of the cases, among adults, were protracted to any great length of time, one in each year; one to 48, the other to 41 days. But, even after this period the debility and various annoyances, which usually succeed tedious cases of this disease, prevented the patients from pursuing their avocations for several weeks longer, but required no medical treatment. In one or two cases of a violent character, when ulceration had ensued, the purulent, gruel-like evacuations, sometimes mingled with a little blood, continued more or less for several months after the patients were able to go about their usual business, requiring attention to diet, and sometimes a little medicine, and indicating the existence of something abnormal in the system by the general aspect of the patient; but they eventually recovered perfectly, and during the succeeding season

(1855), when the same epidemic was prevailing, were remarkably free from any symptoms of their previous trouble. And it may be remarked that all the subjects of the disease, even those who had it most severely, and were kept under treatment for periods varying from a week to three weeks or more, are now, with the exception of the fatal cases, as well as they were previous to contracting the complaint; in one or two instances, among children, apparently in better health.

Symptoms.—The cases usually commenced, as far as could be ascertained, with diarrhœa, for which, generally speaking, no particular cause could be assigned; certainly it seldom appeared to be due to irregularities of diet. This diarrhœa usually soon merged into small mucous or bloody stools, or more commonly both combined, and usually accompanied with pain in the lower part of the abdomen, generally very slight at first, and tenesmus. In a few instances, the discharges were, from the first, almost all blood, of a rather thin, diffluent character. The evacuations soon became very frequent, every half-hour, or in many cases, every few minutes; the tenesmus and the pain across the lower part of the bowels becoming excessively severe, but generally subsiding, to a considerable extent, during the interval between the discharges. In many cases, a distressing pain was complained of in the lumbar region, more intolerable than the cutting pain in front. After the disease had progressed in this way for a time, there was generally tenderness on pressure over the abdomen, especially over the track of the descending colon, sometimes confined to this part. The tenderness on pressure was not, however, usually very severe. There was seldom any *vomiting*, or any considerable nausea, in the early period of the disease, unless induced by the remedies employed. In two of the three fatal cases, however, vomiting was, from the first, a troublesome symptom. When vomiting did take place, it was generally of yellow or greenish bile, sometimes in large quantity. *Hiccup* was observed in but one case, and was troublesome for twenty-four hours. *Thirst* was almost always complained of, generally urgent, at the same time.

There was seldom much heat of skin or febrile excitement. The skin was, however, universally dry and harsh, and it was found difficult to induce any degree of diaphoresis. The *urinary secretion* was not materially altered. The *pulse* was often about natural in frequency and force, except when temporarily excited by the tenesmus, or by the cutting, griping pain in the abdomen. It was very seldom hard and bounding, and very often noted as feeble and frequent. The *tongue* was much coated with a white or yellowish fur; in a few cases dry and brown,—in most cases moist. In the cases in which the former condition was noted, there was not noticed more than in others, any tendency to a typhoid character. There was no tendency to *cerebral* disturbance noticed in any of the cases except two, one of which had delirium tremens. As the disease progressed, the discharges very frequently altered, after a few days, from slimy mucus and blood, to the latter mingled with those fibrinous shreds, which have been very aptly compared to meat washings in appearance; after a time, very commonly, to the latter unaccompanied with blood; these latter discharges, however, often appeared quite early in the attack. Later, if the disease continued unchecked by the remedies employed, these evacuations became mixed with a purulent, gelatinous substance; and finally, in the protracted cases, to a purulent, gruel-like fluid, alternating, now and then, with bloody mucus. In a few cases those discharges continued for several weeks, even after the patient was able to resume his occupation, and had moderately strong diet. In but few cases was any *scybala* noticed. In many cases, under the influence of remedies, the discharges would become bilious and feculent, sometimes for twenty-four hours or more, to give place again to those of a dysenteric character. In most of the cases, even among the worst, a bilious discharge could generally be obtained by a mild cathartic, to be, for the most part, succeeded by the regular unhealthy evacuations.

Contagion.—The question of contagion or infection has been much discussed by writers on this subject. During the

first season of the epidemic, it did not clearly manifest a contagious character, unless the fact, already alluded to, of its having existed almost exclusively, for some time, in one street, among a small number of houses adjacent to each other, be taken as an indication. During the second season the epidemic became undoubtedly contagious. In proof of it numerous instances might be adduced, but not to occupy more space than necessary, only a few instances will be noticed. In one family, in the country, four or five miles from the village, consisting of five persons, two children and three adults, one of the children, nine years of age, became affected first, and was one of the most protracted and troublesome cases, lasting six weeks. Subsequently the other child, five years old, took the disease in a less severe form. Then the mother and aunt who nursed them; and the father was once or twice during the time slightly affected with the same symptoms, requiring medicine to check them, although he was seldom in the house. In a house situated in the same yard, a man took the disease; and subsequently, during his convalescence, a child eighteen months old, which had been kept in the same room most of the time, contracted it. This occurred in one of the most healthy localities in this vicinity. About a mile from this house was a family consisting of a man, his wife, and four or five children, all living in a very narrow compass, mostly in one room. A boy about five years old was attacked; a week after, an infant; both of whom had it severely; shortly after, another boy seven years old took it. Instances similar to this also occurred in the village; and, in one instance, a child from a section of the country where the disease was not prevailing, came with its mother to the village, to visit a relative sick with dysentery, and, returning home the next day, was attacked by the symptoms. Such instances were too common, both here and in the surrounding country, to be for a moment attributed to chance, or to the diffusion of the epidemic influence through the air; for in many instances, a family would have two or three members taken down in succession, and neigh-

boring families be exempt;—showing that many, who had power to resist the influence of the poison in the diluted condition in which it existed in the atmosphere, succumbed when exposed to the more concentrated form in which it existed in the sick chamber, and especially when the exposure was prolonged for days and nights. There were but very few instances, however, where the disease appeared to be communicated by a limited exposure. It seemed to require a somewhat prolonged stay in the tainted air of small rooms, where, to some extent, the exhalations from the body of the sick, and the odors from the bed-clothes and bed-pan were almost constantly inhaled by those in attendance. In addition to these, fatigue and anxiety no doubt had their influence.

Treatment.—In the earlier stages of the disease, when confinement to bed was not rendered necessary by the severity of the symptoms, *rest* in the horizontal position was imperatively enjoined, but probably seldom maintained for any length of time. Very soon, the progress of the disease itself compelled obedience. Attention to *diet* was next enjoined. When the disease became fully developed, want of appetite rendered injunctions against its abuse unnecessary. But, previous to this, and during the convalescence, strict attention was given to this important point in the treatment of dysentery. Arrow root, sago, etc., only were allowed in the cases severely attacked; and but small quantities of these generally were taken, for want of inclination for this species of food, or from total anorexia. A certain amount of food was, however, advised, even when inclination did not prompt. In other cases, especially such as had a pulse below par, toast, crackers, tea, farina, and such like articles were allowed, but this was an exception to the rule. If the disease became protracted, and the strength began to flag, beef tea, chicken soup, mutton broth, "corn starch," jelly, milk and bread, milk toast, and, in some cases, eggs were allowed; in some, rice; afterwards, mutton, chicken, eggs, beef, etc., attention being given to quantity as well as to quality in all cases.

General depletion was not practiced in a single case of the adults, and in but one case among children. As might be inferred from what has been said of the state of the pulse under the head of *symptoms*, this was considered at least unnecessary. *Local depletion* was practiced in but one or two cases, even when the cutting pain, the tenesmus, the tenderness on pressure were urgent, and the bloody discharges very frequent; not because it was considered unlikely to produce a beneficial change in these symptoms, but owing principally to the fact that the means of the patients attacked did not admit of the expense of a large number of the valuable auxiliaries in the treatment of inflammation. It is questionable, however, after a careful examination of the progress of the cases, whether the sufferings of the patients would have been materially lessened, or the duration of the treatment shortened, by a resort to leeches, except in a very few instances. In two or three cases, where the disease assumed an uncontrollable and tedious form, a great variety of medicines were used, as each, in turn, failed of its expected effect; but, in a great majority of the cases, it was found necessary to apply but a small number, the principal of which were *calomel*, *blue pill*, *opium*, *ipecac*, *castor oil*, and *oil of turpentine*.

Calomel was used to fulfill two distinct indications: First, in large doses, as a *prompt sedative*, and with some view to its ultimate action in the secretions of the liver and alimentary canal. Secondly, in small doses, combined with other remedies, to produce a more gradual and permanent effect on the secretions; though, with the latter view, it was employed in but few cases, *blue pill* having been generally substituted for it as being more mild in its action. Almost every case was treated by mercury to some extent, in some one or other of its forms and modes of administration, and this agent was regarded as the most efficient, to which all the others were only subordinate and auxiliary. In several cases, as will hereafter be seen, this remedy alone was found sufficient to bring on a rapid convalescence. Before the occurrence of dysentery in an *epidemic* form in this region, we had always

found that calomel or blue pill in divided doses, and combined with some anodyne and diaphoretic, and in some cases aided by mild purgatives and astringents, was effectual in producing a speedy cure. But, in the present instance, it became very soon evident that the disease had assumed a much more troublesome form, and that some means of more speedy relief was necessary. Large doses of opium, and large anodyne enemata, failed to bring any relief to the distressing tormina and tenesmus. The efficacy of scruple doses of *calomel*, so highly recommended by Johnson, Annesley, and others, and recently endorsed by the high authority of Professor Dickson, of Charleston, was then tried, and with signal success. Its action was usually this:—It was generally administered in the early stage of the disease; very often as the first prescription. The patient would be suffering the most intense cutting pain across the abdomen, often accompanied with considerable tenderness on pressure, distressing tenesmus, and passing blood or bloody mucus every ten or fifteen minutes, and earnestly desiring some immediate relief; sinapisms, fomentations, and similar remedies had already been applied; one scruple of calomel was then given immediately; within an hour generally, relief, sometimes complete, would be obtained; for five or six hours, frequently for eight or ten hours, there would be no discharge from the bowels, and very little uneasiness of any kind. In a few cases, the bowels were constipated for twelve hours or more, requiring a dose of castor oil to move them. Generally, after six or seven hours' relief, the patient would have two or three loose bilious evacuations, brownish or greenish, sometimes attended with some pain and griping, sometimes not. In not a few cases, the distressing symptoms did not recur at all, and convalescence commenced; or, only one or two doses of anodyne or astringent remedies, or more commonly a small dose of castor oil, would be required to perfect the cure. In a majority of the cases, however, in from twenty-four to thirty-six hours after the operation of the calomel, the dysenteric symptoms returned, though in a de-

cidedly mitigated form, there seldom being any severe pain or griping, though sometimes tenderness on pressure. In but very few of the cases did the calomel produce any ptyalism or any decided affection of the gums, and in no case did it produce any severe mercurialization. In forty-seven of the ninety-six adult cases, the scruple dose was given, and in a few cases repeated, when the first dose did not seem to have the intended effect, or when the symptoms recurred. The average duration of treatment for these cases was eight and a-quarter days against the general average of six and a-half. *Blue pill* was never given alone, but in combination with other remedies. *Opium* and *morphine* were tried in large doses, and in moderate doses frequently repeated, to allay excessive restlessness, or pain, or tenesmus, or to arrest the discharges when unusually frequent and debilitating, and when other means had failed; but seldom answered expectations. Now and then, morphine, however, had a very good effect after the failure of other means, but did not exert much permanent or curative action. *Dover's powder* was very serviceable in large doses, as an adjunct to the mercurial treatment. *Ipecac* was seldom used in full doses, and when it was, did not seem to have any beneficial action. In small diaphoretic doses, however, and in combination with calomel, opium, or blue pill, it was very serviceable. The *oil of turpentine* was used in many of the cases, and with very marked benefit. But its beneficial action depended on the period of the disease at which it was given, and on the preparative effect of other remedies. Given early in the disease, it was generally inefficient, but very seldom actually hurtful. One case, however, of a very severe character, was arrested from the beginning by this agent. But, given in doses of about ten minims, in combination with mucilage and some aromatic to disguise the taste, every four hours during the later stages of the disease, and after the action of mercury had manifested itself, or in cases where the disease threatened to become chronic, it was more generally serviceable than any other remedy, allaying the uneasy sensations complained of, and

arresting the discharges. In some cases, where a tendency to relapse manifested itself after the disease had been checked by mercury, and in which the same remedy generally failed, it was particularly useful. The *aromatic sulphuric acid* was frequently used in all stages of the disease, in small doses, generally with a view of arresting nausea and vomiting, when present, or when induced by other remedies, and which interfered with their continuance. In such cases, it had an excellent effect, and frequently also assisted in the cure by its astringent action. *Castor oil.*—This remedy was used to some extent in almost all cases. In most cases, it had already been taken in large doses. In cases where the scruple dose of calomel remained unusually long in the system without purgative effect, this was hastened by a small dose of oil. Doses of one or two drachms, seldom exceeding the latter were frequently used at intervals, when the passages inclined to be infrequent, or when constipation was induced by the alterative doses of mercury and opium. As convalescence approached, and only occasional dysenteric discharges alternated with the bilious and feculent, a few of these small doses were frequently required.

The combinations of remedies used, were generally a pill, composed of blue pill, opium, and ipecac, one composed of opium and acetate of lead; sometimes, in the latter stages of protracted cases, one made up of nitrate of silver, sulphate of iron, and opium.

In most of the cases that were not cut short by the large doses of calomel, the first-mentioned combination was given every four hours, until an alteration was observed in the discharges, or, until a decided effect on the gums was observed. This combination was much in vogue, in the medical department of the New York Hospital, during our connection with that institution, in the capacity of resident surgeon, and is, in most cases remarkably mild and efficacious in its action. The acetate of lead did not sustain the reputation accorded to it by many writers.

External Applications.—The only one of these adjuvants,

from which any important aid was derived, in the treatment of adults, was the ordinary blistering plaster; though fomentations of various kinds, sinapisms, cataplasms, anodyne plasters, turpentine, etc., were frequently employed, and often with much temporary relief. Blisters were, in general, only applied when much tenderness on pressure existed, and when this did not readily yield to the internal remedies employed, or to the other external applications. The use of the blister was not delayed on account of a dry skin, or excited pulse; and, in almost every instance, afforded marked relief, often within an hour or two. It seldom required repetition, and was allowed to heal as soon as possible. It was used in *twenty-three* of the ninety-six cases. *Leeches* have already been alluded to. *Opiate enemata* and *suppositories.* These were repeatedly used in all the troublesome cases; sometimes with very good effect, generally so, when the patient was able to retain them; but the tenesmus and irritability of the *rectum*, were such that they were seldom retained a sufficient length of time for any good purpose, which caused not a little disappointment, and embarrassment, as they had heretofore been relied upon as an almost certain means of affording, at least, temporary relief to the most distressing symptom.

Of the Disease as it appeared among Children.—During the first season, dysentery prevailed to but a moderate extent among children, and intestinal affections generally, were unusually rare. During the past season, it prevailed to a considerable extent among them. Of many cases however, no notes were taken, owing to want of time, to which, therefore, no reference can be made in this paper. Among the forty-three cases of which full notes were kept, there were, as has already been stated, *three* deaths. Many of the cases were of rather a mild character, and soon yielded to treatment. Many, attacked quite severely, and allowed to go for several days without treatment, or tampered with by the empirical administration of various remedies, soon gave way to appropriate treatment.

A majority of the cases were tedious, and troublesome, and required incessant watchfulness, and frequent modification of treatment. Two of the fatal cases died within three days of the commencement of the attack, time being scarcely allowed for the proper action of appropriate remedies. The disease assumed very much the same character that it did in adults; the evacuations were very much alike, except that green evacuations were common with children, and uncommon with adults. The febrile symptoms were seldom severe, and readily yielded to mild diaphoretics. There was seldom any considerable tenderness on pressure over the abdomen. Vomiting was not a more common symptom with children than with adults, and seldom gave much trouble. *Head symptoms* were seldom observed; in one case, however, they proved fatal. The *tenesmus* was very distressing, and the discharges very frequent. The appetite was, from the first, almost entirely lost, and it was frequently difficult to get down sufficient nourishment to support life. As soon, however, as convalescence fairly commenced, it was just as difficult to restrain the appetite. Other symptoms not enumerated were similar to those which obtained among adults.

The general principle of *treatment* was the same for children as for adults. Mercurials, which were at first not so much relied upon, became, at last, from necessity, the main reliance. The scruple dose was, of course, not tried, but sedative doses, apportioned to the age of the patients, were at first tried, but soon abandoned, as their action was totally different from what obtained among adults. In one or two cases, in which the disease assumed a very obstinate form, and where the calls to stool, and the tenesmus were incessant, repeated doses of *morphine* were very serviceable, and it was remarkable what large doses were required by such young subjects. Turpentine was found very useful in doses of three to five minims in mucilage, every three or four hours. *Blisters* were not so generally employed as among adults, and, although useful, did not afford the marked and speedy relief which followed their application in the case of

adults. Purgatives, even of the mildest kind, did not often prove beneficial, and very often seemed to aggravate the symptoms. But, at the very onset of the disease, a purgative of calomel and rhubarb, or of these combined with magnesia, was very efficacious, and in a few cases cut short the disease. The most successful combination of remedies was *calomel*, *opium*, *ipecac*, and *acacia*, thoroughly triturated together, given every two or three hours, and continued, if necessary, for days together, or until the discharges assumed a bilious character; in some cases, no appreciable change occurring for several days, but the disease almost always yielding in time to a perseverance in the remedy. The *calomel* and *ipecac*, were used in very small proportions, but the opium sometimes, required to be combined in comparatively large proportions; always regulated, however, according to the amount of individual suffering, and the frequency of the discharges. In many cases, when the tenesmus was particularly distressing, and the calls to stool almost incessant, it was found advantageous to keep the little patients constantly in the horizontal position in bed, and never to allow the use of the close-stool, but to receive all the evacuations in napkins.

Having thus given a full and fair statement of the origin, progress, symptoms, and treatment of epidemic dysentery, *as it has prevailed in this locality*, for two years past, we have but few remarks to offer in addition. The *mortality*, to whatever cause it may be attributed, has undoubtedly been remarkably small. We cannot boast of anything novel or peculiar in the treatment. There are some points, however, which we may perhaps advert to with propriety.

First, as to blood-letting, depletion, either by the lancet, by cupping, or by leeches, has almost universally been regarded as a *sine qua non* in the management of dysentery.—Among the 139 cases treated by us, the lancet was used in but one case, a girl nine years old; and this proved one of the most troublesome and protracted of the whole number, al-

though there was every ground for hope, from the nature of the symptoms, that immediate relief would follow the abstraction of blood, there was not even temporary alleviation. The case ultimately recovered after a confinement of several weeks, but the prostration was extreme. In no other case did venesection appear to be called for, although, as has elsewhere been stated, the patients were generally in the prime of life, and in full health when attacked. Local depletion, by cupping or leeches, was practiced in but one or two cases; the reason for this has already been given, and the opinion hazarded that nothing was lost by it. The administration of large doses of *calomel*, though long since recommended and employed with success, has, it seems, but few advocates in the profession at the present time; and it was with many misgivings that we ventured upon it in the first few cases, although it had the sanction of the great names which have already been alluded to. We have said that it was used to fulfill two distinct indications, viz.: as a sedative, and as an alterative. Regarding the *sedative* action of calomel, many doubts in high quarters have been entertained.—Thus, Headland, in his admirable essay "on the action of medicines," the most recent, and by far the best, work on the subject, says, p. 10:—"Some have, without sufficient reason, assumed calomel to be a sedative when given in large doses. To act in this way very large doses have been given in fever and malignant cholera. Calomel is naturally an insoluble substance, and in these cases the function of absorption is at the very lowest ebb, so that it is probable that the large doses are often left unabsorbed, and pass out of the bowels very much as they entered, producing scarcely any more effect than so much chalk mixture." We do not venture to offer *opinions* in opposition to so high an authority; we simply offer facts, which facts may be interpreted by each as he thinks fit. We have already stated fairly in general terms the action which the scruple doses of calomel had in the cases treated by us, and, at the risk of increasing the length of this article to a tedious extent, if it has not already been done,

we will insert a number of cases illustrating this point. But before we proceed to this, let us quote the experience of another recent writer on the action of large doses of calomel in a different disease, but of the same viscera. Dr. Vanderveer, physician to the Franklin-street Hospital in 1854, in an excellent article, in the September number of this Journal, on the treatment of *cholera*, as he witnessed it, says:—"Some are very much amazed and frightened if you tell them to give a large dose of calomel alone," * * * * "now," he adds, "I have generally found calomel slow in its action as a cathartic; in large doses, more *sedative* in its effects; and its cathartic action does not increase in proportion to the increase of the dose." * * * * "I have never met with a case of *cholera* treated as above stated, and hypercatharsis ensue; on the contrary, it has frequently occurred that patients, both in hospital and in private practice, have been seized with violent vomiting, purging, and cramps, which had, from their own statement, been kept up every ten minutes for one, two, or three hours; and after taking sixty grains of calomel, have not vomited or purged for three, six, or twelve hours after; and in two or three instances in the hospital, after waiting twelve hours, resorted to mild enema to open the lower bowels." Now this coincides precisely with our experience of the agent in the late epidemic of dysentery. Dr. Headland thinks that only a small portion of the dose is absorbed, and that the remainder passes off as an inert substance. But, if this be so, how is it that five or ten grains will increase the purging, and *produce* irritation, as we found to be the fact, and twenty or twenty-five grains *relieve* all these symptoms?

It has been stated that the average duration of treatment was materially lengthened in the cases treated by the large doses of calomel; but we can scarcely attribute this fact to any deleterious action of the calomel, when we see that, in almost every instance, such marked relief followed its administration, and also that many cases required no other remedy. Most of the cases, in which the remedy was used

in these large doses, were very severe, and would, no doubt, have been protracted under any treatment. And, before our confidence was established in the heroic use of the medicine, it was, in some cases, postponed until other remedies had failed; whereas, to be fully effective, we found that it must be employed early in the disease. These large doses were not indiscriminately given, as will be seen from the fact, less than one-half of the cases were treated in this way; indeed, it was only in such as were attacked with particularly distressing symptoms, or when other remedies had already been tried and found wanting, that this was resorted to.

Case 1.—W. B., aged about 40. Was called to this patient, August 18, 1854. Has been sick for several days, complaining of pain in the abdomen, vomiting, fever, and bloody stools. Discharges are now almost constant, nearly all mucus and blood; has a severe cutting pain in the abdomen; thirst excessive; pulse about normal; tongue coated; no fever; has not been in bed. Has taken castor oil and laudanum. ℞ hydrarg. sub. mur. ℈j., also, pulv. ipecac. gr. ½ q. 2. h. August 19.—Patient had two dark, greenish evacuations several hours after taking the calomel; has had no pain since. Took one or two opium pills, and has had no passage for the last ten hours. Feels quite comfortable; skin more natural; no pain; slept well all night. 20th.—During the day had a return of the bloody discharges which have continued to this time. ℞ hyd. sub. mur. ℈j. Evening.—much better, only one evacuation since morning. Has no mercurial fætor, and no tenderness of gums. ℞ ol. ric. ʒij. 22nd.—Has had only two evacuations, which were bilious and feculent. 24th.—Convalescent.

Case 2.—T. J., aged 25. Called to patient August 19th. Attacked yesterday with vomiting, pain in the abdomen, especially on the *right* side; frequent bloody and slimy discharges; fever and thirst; pulse accelerated; tongue coated; pain is very severe. ℞ hyd. sub. mur. ℈j, ipecac. gr. ½ ♏. Rest and low diet. 20th.—Says the medicine oper-

ated several times, producing dark, bilious passages and considerable griping. Is much better to-day, and walking about; has had no passage for several hours. August 23rd. —Has had no return of difficulty. There is no affection of the gums.

Case 3.—I. P., aged 22. Called, September 5th. Patient has had several "bilious attacks" during the summer, for which he has taken mercurial cathartics and emetics. Attacked two days ago with "looseness of the bowels." Has now small, greenish mucous discharges every ten or fifteen minutes, attended with a "cutting, tearing" pain in the abdomen; tongue heavily furred; great thirst; skin natural; pulse soft and rather feeble. ℞ hyd. sub. mur. ℈j. Evening. —No evacuation since taking the calomel; no pain; very little thirst; feels comparatively comfortable. 6th.—Only one passage since yesterday, bilious. Complains of headache. ℞ ol. ric. ℥i. Evening.—Has had several greenish discharges since morning. 7th.—Feels better. No discharge since yesterday. 9th.—Convalescent. There is no evidence of ptyalism.

Case 4.—Mrs. C., aged 41. Called, September 19th. Has been complaining for some days of disorder of the bowels. For two days, has been passing bloody and mucous stools every half-hour, and sometimes every few minutes; has fever; excited pulse; furred tongue, and some pain in the bowels. ℞ calomel ℈j. 21st.—Much better. Has required no medicine but the calomel. 23rd.—No return of dysenteric symptoms; no tenderness of gums.

Case 5.—I. P., aged 22. Called to patient, September 20. Has been sick for three or four days in the city. Has now ten or twelve passages a-day, consisting of bloody mucus; not much pain (this is the subject of case 3). ℞ hydr. sub. mur. ℈j. 21st.—Had four greenish evacuations yesterday some hours after taking the calomel; one of same character this morning. ℞ ol. ricini ℥j. Has no pain except just previous to stool; no fever. Evening.—Oil failed to operate, and a second dose was taken producing two

bilious stools; skin rather warm; some nausea. ℞ ipecac. gr. ¼ q. 2. h. 22nd.—Had only one passage last night, which was bilious. 23rd.—No passage since yesterday. Stop medicine. 24th.—Convalescent; no ptyalism.

Case 6.—Mrs. T., aged 25. Called, September 22nd, in the evening. Has been sick for more than a week with "looseness of the bowels," and occasionally chilliness, followed by fever. Has not been confined to bed; passages have been small, but their appearance not observed until to-day, at noon, when she was attacked with very frequent bloody discharges, attended with severe pain in the abdomen. Took two pills, each containing a grain of opium, and three grains of blue pill; has had no passage from that time to this, ten o'clock, P.M., at which time was attacked with a severe chill, followed by fever. ℞ calomel ℈j. 23rd.—Was up only twice last night; no blood in the evacuations; has no fever this morning; and no pain. Evening.—Better; no fever; complains only of slight pain in the bowels; only one evacuation within the last six hours. To take pulv. dov. gr. vi. at bed-time. 24th.—Much better. Only one passage last night. 26th.—Convalescent; no ptyalism.

Case 7.—M. L. aged 46. Called, September 29th. Has been sick five days. Has had bloody evacuations for three days; complains now of severe pain in lower part of the abdomen, and in the lumbar region. Has taken "hot drops," and other medicines. Tongue moderately coated; thirst moderate; pulse about normal. ℞ hydr. sub. mur. ℈i. September 30th, calomel arrested the pain, and the evacuations. Has operated several times within the last twelve hours, producing bilious passages; has had no bloody discharge. ℞ pil. opii. et plumb. acetat. gr. i. a. gr. ij. October 1st.—No passage last night; feels "quite well." To stop medicine. October 8th.—Has had no further trouble; gums not touched.

Case 8.—Mrs. C., aged 40. Called, October 11th; has had diarrhœa for some days. For two days has been passing blood, with considerable pain in the lower part of the abdo-

men, tongue furred, pulse about normal. ℞ hydr. sub. mur. ℈i. Evening.—For several hours after taking the calomel, had no passage. It has operated several times, producing bilious evacuations, and some vomiting of bilious matter. Feels much better; has no pain. To take no medicine for the present. October 13th.—Quite well, and about her work; no affection of gums.

Case 9.—Mrs. S., aged 48. Called, October 20th. Has been sick for some days, and taking laudanum, burnt brandy, castor oil, etc. Has now very frequent bloody passages, with some pain in the abdomen, tongue heavily coated. ℞ hydr. sub. mur. ℈i. 21st.—Much better; medicine operated freely, producing dark bilious evacuations, no blood in them. 22nd.—No return of dysenteric discharges. 24th.—Patient has required no other medicine, and is quite well. No symptoms of ptyalism.

Case 10.—P. R., aged 35. Called, September 28th. Has been "complaining" for a week or more. For two days, has been passing blood and mucus every few minutes. Complains of great tenderness on pressure over the whole abdomen. Says he had a hot fever; skin is now cool, tongue heavily furred, pulse natural as to frequency, and rather feeble. Has taken ol. ricini and laudanum, several times. No relief from either. ℞ hydr. sub. mur. ℈i. Emplast. canth. 5x7 to abdomen. Arrow root. 29th.—Much better, no pain. Medicine operated well. Took two pills, composed of a grain of opium, and two of acetate of lead. October 1st.—Convalescent. No effect on the gums.

Case 11.—Mrs. B., aged 30. Called, August 24th. Has been complaining of nausea for three weeks; was attacked yesterday with looseness of the bowels, attended with griping pain, which is now very distressing; evacuations are frequent, small and mucous, but no blood. ℞ hydr. sub. mur. ℈i. Evening.—Bowels have only moved twice since medicine was taken; pain entirely relieved. No ptyalism.

Case 12.—H. J., aged 30. Called, September 2nd. Has been passing bloody mucus for some days. Has been going

about and taking no medicine. To-day, was attacked with pain in the abdomen, and noticed that his passages were nearly all blood, pulse feeble and excited, skin natural, tongue furred. ℞ ol. ricini ℥ss. cal. gr. iv. ipecac. gr. ½ ℿ. September 2nd.—Evening; medicine operated freely, producing dark, bilious evacuations. Patient also vomited freely. Passages are again small and bloody, and patient complains of great debility and nervousness. To take a pill composed as follows:—℞ pil. hydrarg. gr. iij-opii. pulv. gr. i. ipecac. gr. ⅓ ℿ. g. 4. h. Sept. 3rd.—Took three pills, and evacuations were completely checked. Complains of nausea and vomiting, and of great tenderness over the lower part of the abdomen, and severe griping occasionally. ℞ hyd. sub. mur. ℈i. and apply emp. canth. to abdomen. Nine o'clock, P.M. Patient is like another man. Has had no pain since the medicine was taken, and no passage for seven hours. Has had three dark, bilious evacuations. No tenderness of gums. September 6th.—Cured.

Case 13.—J. J. aged 48. Called, September 10th. Has had "looseness of the bowels" for several days. For twenty-four hours has been passing blood, and has the usual symptoms of dysentery. ℞ hydr. sub. mur. ℈i. September 11th.—Had no passage for several hours after the medicine was taken. Has had three or four since; the first bloody, the others bilious. ℞ ol. ricini ℥ij. 12th.—Much better. Oil operated twice, producing bilious and feculent evacuations. 14th.—No return of trouble. No ptyalism. Has gone to work.

Case 14.—M. J., aged 19. Called, September 18. Has had the usual dysenteric symptoms for three or four days; has been passing bloody mucus for two days. Has taken two doses of castor oil. ℞ ol. ricini, ℥ss.; cal. gr. v.; ipecac. gr. ½ ℿ. 19th.—No better; complains of severe pain in the abdomen in addition to the other symptoms. ℞ hyd. sub. mur. ℈i. Evening.—Medicine has operated four or five times; passages are bilious and feculent; pain entirely relieved; is walking about the house contrary to orders. 20th.—Has had two or three bloody evacuations—gums

decidedly affected; mercurial fætor well marked. Ordered to bed, and to take ℞. ol. ricini, ʒj.; tinct. opii. gtt. ij. ℥. Evening.—Medicine required repetition; has had three bilious passages. 21st.—Passages bilious and feculent; no medicine. 22nd.—Convalescent.

It will be perceived that we have confined our remarks solely to the history and treatment of dysentery *as it has prevailed here* in an epidemic form during two successive seasons, and have purposely abstained from offering any suggestions or opinions as to the treatment of dysentery in general, fully agreeing with Dr. Copland when he says: "That writer will but imperfectly perform his duty, who, in giving a history of a most prevalent and dangerous malady, confines himself to the particular form it has assumed during a few seasons within a single locality, or the small circle of which he is the centre, and argues that it is always as he has observed it." It can only be, by comparing together the histories of a disease, as they are given by various writers in all parts of the world, that we can arrive at any satisfactory knowledge of the general value of a particular remedy, or be enabled to assign it a comparative rank in our list of therapeutical agents. This is especially true with regard to this particular disease, than which there is none which assumes more varied forms in different localities, or in the same locality in different seasons, and it is this peculiarity of the disease which satisfactorily explains what would otherwise be a lasting disgrace to the medical profession; namely, the fact, that, in half a dozen different localities of our country, and in other countries likewise, we find as many physicians, each equally honored in the profession, each advocating a different line of treatment for the same affection, one oftentimes diametrically opposed to the other, and each claiming, and honestly too, a large measure of success. What rule, then, are we to adopt in the treatment of this protean malady; or, rather, how is the practitioner, who has just entered upon the duties of his profession, or, in whose

neighborhood the disease has made its appearance in a severe form for the first time, to be guided in searching for a general principle of treatment? The task is difficult; and it is evident that it can only be accomplished by a careful collation of all the features, forms, and symptoms of the disease, as presented in the various reports from all parts of the country, with the peculiar line of treatment adopted in each locality. Fortunately, since the establishment of the American Medical Association, the task is not so difficult; for, in the different volumes of the transactions of the Association, we have a valuable series of reports by competent and reliable men from almost all parts of our widely extended domain, on the subject of the prevailing epidemics of the country, and these reports are particularly full and explicit with regard to the disease now under consideration; being, as it appears, the most prevalent and important malady in most of the sections of country reported from. It may not prove unprofitable, then, to institute here a comparison between the history of the epidemic, as it prevailed here, and as it has appeared elsewhere within the last few years.

Not to indulge in too much space, however, we will confine our inquiries mainly to those topics, concerning which the greatest discrepancy of opinion has prevailed among writers, and to those characteristics of the present epidemic so much at variance with most of the accounts heretofore published. It is somewhat remarkable that so little has been written on the subject of epidemic dysentery for some years past in the various periodicals of our country, with the one exception just referred to. Most of the recent papers relating to it having appeared in foreign journals.

Dysentery, though still one of the most prevalent diseases in all parts of the world, is far less so than formerly, especially in cities and large towns, where it now seldom prevails epidemically. It has also, in common with some other epidemics, lost much of its former fatality. From having been the scourge of armies, ships, and prisons, it has become, as a general rule, a very manageable disease. During three

years of the Peninsular War, the deaths from this disease alone, are said to have amounted to nearly five thousand; and the whole number of cases estimated at 40,000. It is said to have made more havoc among the French troops in Egypt, than the Plague itself. During the first few months after the Allied Armies set themselves down before Sebastopol, dysentery prevailed to a great extent among the troops, the circumstances being remarkably favorable for its development, and equally unfavorable for its treatment; and the fatality was very great. During the last summer, although the cases have been numerous, the success of the treatment appears to have been creditable to the surgeons; the proportion of deaths having been very small, compared to what usually occurs in camp. Occasionally, the mortality in private practice, at the present day, runs very high. "In the year 1852," it is stated in the report on dysentery, to the American Medical Association, that "1,923 persons died of this disease in Kentucky, nearly one-fifth of the deaths from all assigned causes." Dr. W. Johnson, of Hunterdon County, New Jersey, in his report, says of the epidemic of 1851, in that State:—"Never, I believe, in the memory of the oldest inhabitants, has an epidemic been as destructive to the adult population." "Dr. B. F. Lindlay, of Washington County, Penn., furnishes an account of a disease which prevailed in 1851, in Greene and Washington Counties, which was termed by most physicians, epidemic dysentery; and its fatality rendered it a terror to the inhabitants of this part of the country, and an object of deep interest to the intelligent medical practitioner." Dr. Pearson, of Alabama, in his report, "speaking of the malignant form of the disease, as it appeared in and around Warsaw, Sumpter County, says that, nearly or quite three-fourths of all attacked, died—in some instances, whole families, nearly." Sometimes, the mortality, though small in a particular locality, is very great in certain families. Thus, Dr. Thomas, of Tennessee, "was called to a family in which three had already died, and five more died under his charge." Thus, we see that, although

the disease has lost many of its former terrors, it is still sufficiently wide-spread and fatal, to render its history and treatment an object of considerable importance to the practitioner of the present day.

As regards the *causation* of the disease, the coincidence of an epidemic with a severe drought has been noticed in several instances. Thus, in New Jersey and Pennsylvania, "the disease occurred extensively in 1851, when there was a severe drought, to which many physicians were inclined to attribute the disease in part." Dr. Cilley, of Alabama, reporting to the Association in 1851, speaks of a long continued drought as preceding and accompanying the disease, but does not refer to it as a cause. The reports from Michigan, in 1851, say that dysentery prevailed very extensively throughout the State, "while the severest drought has obtained, also, that has occurred for a great length of time."

With regard to the *contagiousness* of the disease, the general impression of physicians appears to be opposed to it, although many high authorities hold to the doctrine; and many writers cite facts which can scarcely be explained, except on the supposition of the existence of a contagious principle. Thus, to quote one very strong instance:—Dr. I. T. Plummer, of Wayne County, Ohio, in his report to the American Medical Association, says:—"The following case occurred eight or nine miles west of Richmond. The father, (of healthy constitution, and robust frame), was first attacked; during his early convalescence, the rest of the family, consisting of five or six individuals, became affected, and afterwards, an old Irish woman, who came to nurse them, was early prostrated; another nurse came and took charge of the family, who returned home in a short time, and also took the disease; there were few or no other cases in the neighborhood." The reporter makes no remark about contagion, except that "few of the neighbors could be induced to nurse the family for fear of it."

Among writers of eminence who are most strongly impressed with a belief in contagion, may be mentioned Cul-

len, who defines dysentery a "contagious fever." Dr. Parr, and Dr. Young, the one saying that it is *generally*, the other that is *often* contagious. "Pringle, Hunter, Harty, Balfour, and Chisholm, contends strongly for the existence of such a principle," (specific contagion). Good's *Study of Med.* Art.—*Dysenteria.* Pringle, whose experience was very extensive, regards contagion as an admitted fact; since, in speaking of the question of the identity of the miasmatic fevers with dysentery, raised by Sydenham, he adds,—"the circumstance of its being contagious shows that dysentery is essentially different from these fevers."* In later times, Dr. Hosack is the firmest believer in the theory of contagion. He says,—"But, although filth may generate it, and give malignancy to the disease, a specific contagion will, in some cases, propagate it, even where cleanliness is observed, and in the pure air of the country." And he adduces the following instance,—"This was the case, according to Dr. Blane, in the Torbay ship of war, in August, 1780." "The crew," he states, "were predisposed to acute distempers, as was to be expected at that season of the year. . . . In this state of things, a man was brought on board, ill of dysentery. 'Dysentery,' says Dr. Blane, 'became the prevailing disease.'"† It is said by some writers to have been communicated to the fœtus *in utero*. Dr. James Johnson, on the other hand, is the most positive of all the opponents of the contagion of dysentery. He says,—"Neither dysentery itself, nor its attendant symptomatic fever is contagious." And he adds,—"In private practice, the belief in contagion or non-contagion in this disease is not of much consequence, but in the public service it is another thing. . . . It is, therefore, proper for all young medical men to entertain correct notions of dysentery."‡ Elliotson and Watson, in their treatises on therapeutics, doubt the contagion of dysentery; and Dr. Dickson says,—"I, myself, have never met

* RUSH'S *Pringle*, p. 225.

† HOSACK'S *Practice of Physic*, p. 346, et. seq.

‡ JOHNSON *on the Liver*, p. 33.

with a single instance that I could attribute to this source." In the various reports which have been made to the National Medical Association, for the last few years, on epidemic dysentery, the question of contagion is seldom referred to, which is somewhat remarkable, considering how complete in other respects, the reports are, and how unsettled the question still remains. A few of the reporters express a disbelief in it, while one or two have noticed well-marked proofs of it. "Hufeland, and some others," says Copland, "state that they have seen the disease communicated by the pipe of an enema apparatus." "Among those who believe in the infectious or contagious character of the disease, the majority have supposed that only the *asthenic* (chronic) cases propagate by infection, and chiefly for this reason," as Copland adds, "that the circumstances in which they occur, are favorable both to the generation of the infectious emanations, and to their accumulation, concentration, and operation on healthy persons."

From the evidence which we find arrayed on both sides of this question, it is evident that, although dysentery, as a general rule, is not contagious, it is, at times, very decidedly so, and sometimes under circumstances but little calculated to give rise to it. That it is, however, not contagious to that extent to render necessary quarantine regulations, we have the almost universal testimony of writers on both sides of the question. We must, however, disagree with Dr. Johnson, when he says that the belief in contagion or non-contagion is not of much consequence in private practice. During a widespread epidemic, much may be done, when the disease happens to assume the contagious form, by proper restrictions on the intercourse of healthy members of a family with the sick, to prevent its spread through the whole family, especially among children, and this, if done quietly and with due caution, need excite no unnecessary fears in the minds of friends and neighbors. We consider this question one of more than speculative importance. The degree of contagiousness of this malady is very analogous to that of *erysipelas*

and *typhus fever*. Idiopathic erysipelas is seldom contagious, but that form which frequently breaks out in the wards of an hospital, among wounded men or those suffering from ulcers, is eminently so. So, with typhus fever; a single case, in the country, or in a large and well-ventilated room, or even two or three cases,—would very rarely propagate the disease by infection to those in attendance, if ordinary care and cleanliness were observed; but place the cases in a confined space, and allow filth to accumulate; or multiply the cases, even in the well-ventilated wards of an hospital beyond a certain extent, and the attendants would very soon feel the effect.

General allusions have already been made to the extreme diversity of *treatment* adopted in this disease. It is our desire, in conclusion, to refer, as briefly as possible, to some individual instances of variety in its mode of management. The *Dublin Medical Journal* contains some valuable statistical information on the subject of epidemic dysentery. In the vols. for 1849, we have an article from "R. Mayne, M.D., of the South Dublin Union Work-house," on the subject of dysentery as it prevailed under his care in 1846-47-48, with a tabular view of 1222 cases. And in the vols. for 1853, we have the "*Report of Epidemic Dysentery, prevailing in the north of Ireland in* 1852, *based on returns collected under the direction of a committee of medical practitioners of Belfast*, and drawn up by A. G. Malcolm, M.D., physician to the General Hospital, Belfast." "Reports were received from sixty-three practitioners, holding hospital and dispensary appointments, and from forty-four engaged in private practice.—Besides these, supplementary notices were received from various other practitioners in the north of Ireland."

These reports, together with those embraced in the late volumes of the *Transactions of the American Medical Association*, coming as they do from so large a number of well-educated and well-known physicians, afford a valuable mass of reliable information on the subject of the treatment required in different localities, and in the different phases of

this protean disease, at the present day. The following is a summary of that portion of Dr. Malcolm's report having reference to *treatment*. Of forty-nine replies, "forty-six rely on *opium*, for the most part in combination. A very few, indeed, depend on its individual power. Thirty-four adopt some form of mercurial; thirty-two, in combination with opium; twenty-eight used some form of astringent; twenty recommend mild aperients; twenty-two, abstraction of blood; fifteen speak highly of enemata and blisters." "As to combinations, a majority prefer opium with mercury, next opium with astringents. The principal diaphoretic used was dov. powd. A mild farinaceous and astringent diet constantly enjoined. Dr. Brabagen lays great stress on a *change* of aliment, as more important than any medicine." Of forty-two replies on the subject of *mercurial* preparations, twenty-two are favorable under all circumstances; sixteen, conditionally so; only three completely adverse to their employment. Of the twenty-two, only one recommends mercury decidedly to produce salivation. "The terms used by the unconditional advocates of mercury," says Dr. Malcolm, "are extremely encouraging." "But mercury to salivation," he adds, "tells a different tale. For, of all the modes of treatment employed in the twenty-six cases of recovery, it was the slowest."—"The following opinions," he says, "indicate a healthy reaction" (from the favorable opinions previously held of *astringents*). Then follow numerous denunciations from a large number of physicians against a reliance on *acetate of lead* and other medicines of this class. "In corroboration," he adds, "we may mention that the average treatment (under astringents) was sixteen days, or three times longer than with mercury and depletion, while the fatal cases died in one-third shorter time." "Of the sulphate of magnesia and laudanum treatment, great want of faith." Of thirty-eight replies on the subject of purgatives, "only seven used them regularly and repeatedly throughout the disease." Of thirty-six cases taken in illustration of the epidemic, the average

age being forty-three, the average duration of treatment was thirteen days.

The report of Dr. Mayne is valuable from comprising so large a number of cases spread over three successive seasons; and especially interesting in connection with this paper, as coinciding in its description of symptoms and treatment, very remarkably, in some important particulars, with an history of the recent epidemic which has prevailed here. The report states that a great variety of treatment was tried, on the suggestion of various writers of authority, with more or less success, but that finally *mercury* proved to be "the principal remedy." The author says, "I was, at first, much prejudiced against the use of calomel, from recollecting the severe mucous irritations which it so constantly produces when administered for other diseases, and knowing that its efficacy in controlling mucous inflammation in general is trifling, compared to its curative powers in analogous affections in serous membranes, or paranchymatous organs. The weight of Dr. Cheyne's authority also tended to create in my mind a distrust of the mercurial treatment. It was not, therefore, until repeated trials convinced me of its value, and of the total insufficiency of other means, that I became a perfect convert to this practice. But the admirable essay of the late Dr. O'Brian, of Dublin, Dr. Latham's highly practical treatise, Dr. Fergusson's memoir, and more recently, Mr. Labor's paper on dysentery, in a late number of this journal, and Baly's Gullstonian lectures on the same subject, all advocate the use of mercury, and sufficiently attest its powers." "Very constantly it produces a cure before any symptoms of salivation arise; the evacuations alone determine when the remedy should be discontinued." "In some very rare cases, salivation was induced by calomel without any immediate improvement in the evacuations, or material alleviation of the patient's sufferings; a gradual amendment, however, generally ensued in such cases." With regard to the scruple doses of calomel the author tried them very effectually, giv-

ing a dose at bed-time, for two or three successive nights. "In this quantity," he says, "it unquestionably exerts a most powerful influence on the entire mucous tract; affording, at once, marked relief to the most urgent symptoms, and often producing healthy dejections after a single dose." "But," he adds, "I do not recollect that, in any instance, the final recovery was accelerated by this plan." Two grains of calomel with four of Dover's powder usually succeeded." "*Astringents*, whether animal or vegetable, were found to be unsuited to the acute stage, never failing to increase the mischief. *Opium in full doses* most certainly aggravated the disease. *Purgatives* were rarely beneficial. *Laxatives* were, however, very beneficial in the approach to convalescence." "The *turpentines* rather disappointed me." "But," he adds, "in such cases (cases where relapses have occurred after the use of mercury) turpentine proves a most valuable remedy;" "ipecac. perfectly ineffectual."

The reports to the Am. Med. Assoc. on epidemic dysentery are particularly full from the Western, Middle, and Southern States. On the question of the propriety of blood-letting, there is the greatest diversity of opinion. A majority of these reporters, however, who speak decidedly on the subject, seem to be opposed to it. Thus, to quote Dr. W. Johnson, of New Jersey,—"Experience has taught us (that is, the physicians in his vicinity), that it is safe to treat dysentery as an irritation merely of the intestinal mucous surface. * * * When a treatment has been adopted consistent with the inflammatory theory, the fatality has always been alarming." "But one account," he adds, "has been received, which acknowledges the necessity of depletion." Dr. Hollingworth, Physician to Girard Coll., says:—"Depletion and counter-irritation by blisters were ineffectually used." Dr. Mendenhall, of Cincinnati, says:—"General or local depletion by blood-letting was seldom called for." From another part of the State, the report states:—"Blood-letting was but very little used as a therapeutic agent in the disease." In Montgomery Co., Tenn. "Dr. Thomas bled one and cupped two,

without any obvious benefit in either case." Dr. McNelly, of Tenn., "did not see a case which he thought would bear the lancet." From Indianapolis, Ind., the report says:—"It was typhoid in its character, and did not admit of depletion, or any active medication." Dr. Walton, of Kentucky, appears as the strongest advocate of depletion. He states that neither he nor Dr. Adair lost a case that had been so treated. But he does not state whether he lost any, or how many, treated without it, or whether there was any difference in the period of convalescence. From Columbiana Co., Ohio, the report is:—"That the disease bore the lancet with advantage, and that those thus treated recovered in much larger proportion than when it was not used." With regard to *mercury*, only one physician expresses himself as decidedly opposed to it as injurious. Almost all seem to have used it in some form or other, generally in combination with other remedies. Dr. Isaac Casselbury, in his report from Indiana, says:—"Mercurials were thought to do a positive injury." This was in 1848. "In the next year," he says, "the treatment differed entirely from the preceding year; mercurials were strongly indicated." The same treatment was required in the succeeding year. But few of the reporters appear to have given the calomel in large doses. On this point, however, we have evidence from two physicians. Dr. Bertholet, of Berks Co., Penn., says:—"By far the most successful treatment was the mercurial. Large doses of calomel, grs. xx *a* xxx, given at the commencement quieted the vomiting, and checked the diarrhœa. Repeated once in twenty-four hours, they diminished the frequency of the discharges, brought the liver into action, and quieted the general nervous excitement, and, in many cases, evidently arrested the progress of the disease." Dr. B. F. Stevenson, of Boone Co., Tenn., in the report on the epidemics of Tennessee and Kentucky, says:—"He occasionally gave a large full dose of calomel, which always seemed to act as a sedative, and, at the expiration of twelve to twenty-four hours, produced bilious stools." *Opium*, in some form or other,

either alone or in combination, was almost universally used, and the highest encomiums are bestowed on it from almost all quarters. It was seldom exclusively relied on, however, though the report from Michigan says:—"Opium was used by every one who treated the disease, in full, free, and liberal doses." *Astringents* are not well spoken of, except in the latter stages of the disease, or in chronic cases. Dr. Condie, however, states that he *relies* on opiates and astringents, acetate of lead, nitrate of silver, etc. In some parts of Tennessee, also, astringents are highly spoken of. The *Spts. Turpentine* is highly commended by a number of reporters, but generally as a purgative, and in combination with castor oil. Dr. S. P. Hildreth, of Ohio, says:—"Next to opium, the turpentine was thought to aid in arresting the bloody discharges, soothe the irritable mucous membrane, and aid in overcoming the disease, as any remedy used." A report from Venice, Butler Co., on the other hand, condemns turpentine as "aggravating all the symptoms." A remarkable feature in the treatment of a very considerable number of reporters from all the Western and Southern States, is a reliance on large doses of saline cathartics, and the almost universal verdict from those who have tried them is in their favor. Some use them in repeated doses (an ounce, as Dr. McNelly states, every hour), at the commencement of the disease, until relief from the pain and tenesmus is secured, or "until free serous purging is produced." Others give them only occasionally throughout the treatment, and rely mainly on opiates, mercurials, etc. Dr. Wroth, of Maryland, prefers the soda salts. Some physicians of Indiana and Ohio use the bi-tartrate of potash as a purgative. One physician, Dr. Walton, in vol. viii. of the *Transactions*, p. 115, speaks highly of saline cathartics as *prophylactic* in dysentery.—"Free purging with sal. epsom," he says, "as soon as the disease makes its appearance in a family, will go far towards preventing its spread." Injections of strong solutions of nitrate of silver appear to be gaining popularity in some parts of the country.

In the report on the epidemics of Pennsylvania, by Dr. Mendenhall, Dr. Leasure, of Lawrence Co., says that out of one hundred and fifty-three cases, he lost only three. He relied on a combination of opium, ipecac., and calomel. This is the combination we have been in the habit of using in almost all our cases, when the disease was not "jugulated" by the scruple dose of calomel; only substituting the blue pill for calomel, as being milder in its action.

Amid the great mass of apparently conflicting evidence, which we have spread before us in the systematic works on the practice of medicine, and especially in the reports to which we have referred, and from which we have endeavored to extract as fair and impartial a summary as our space would admit, we may still deduce some *general principles* of treatment. Thus, a majority of physicians, at the present day, disapprove of blood-letting, at least as a routine practice, except topical; those who so strongly advocate it, having, no doubt, happened to meet with cases presenting peculiar symptoms, and requiring the prompt and powerful aid of the lancet; and these same persons may, in some future epidemic, find reason to adopt a very different course, as we have seen that Dr. Casselbury was compelled to do in the case of mercury. With regard to *mercury*, there is very little evidence, indeed, in favor of discarding it altogether in the treatment of dysentery. It seems almost invariably to have been used in some form or other; the combination of cal. and opium, and cal. and Dover's powder, being the most common. *Opium*, though largely commended from all quarters, and very justly so, being invaluable in this disease, as in most others where pain and irritation are elements, and though relied upon by a few as the principal remedy, has not often been given to the exclusion of mercury, even by these; and many of the curative effects ascribed to it, have, no doubt, been due to the combination of the virtues of the two. *Cathartics* are very generally approved, and, in many cases, their repeated administration insisted on; and very few physicians venture to treat the disease throughout with-

out a resort to them. The principal difference of opinion being as to the kind of purgative, and the time and mode of its administration. No allusion, however, in any case, is made to a difference in this respect between the treatment of children and adults. We have already stated that purgatives could not be borne in the cases of children treated by us, except at the very inception of the case, when they sometimes "jugulated" the disease. The general verdict is decidedly against *astringents* in the early or acute stages of the disease. Acetate of lead, particularly, so much relied upon formerly, has but few advocates; and nitrate of silver, though commended by several, was generally used in combination with one or more remedies, to which the good results, when they followed, might, at least, in part be attributed. *Turpentine* may, perhaps, be ranked as an exception, the effect of which is not merely astringent, but sedative, perhaps antiphlogistic, to some extent, and, in large doses, mildly cathartic. This remedy, so irritating to the cutaneous surface, has a peculiar influence on the mucous membranes, whether of children or adults; mild, yet prompt and effectual, whether used in large or small doses, which renders it available, in some degree, both in acute and chronic forms of intestinal affections. Emollient and sedative enemata are universally approved, as far as our researches have extended, when they can be tolerated, with one exception.—Dr. Condie, of Philadelphia, who condemns purgatives and enemata of whatever sort, *in toto*, "as irritating to the inflamed coats of the intestines." And, he adds, that he is "happy to find these views adopted by the best practitioners of Europe."

We are surprised to find so little stress laid on the importance of blisters, in this disease, by most of those who have reported on the subject. We have always found it a most valuable auxiliary, both in the acute and chronic forms of the disease. We have found, in the words of one of our former American authorities,* that "they have a double advantage in this

* Dr. Hosack.

disease; they not only relieve local inflammation, but they diminish the general fever which attends the disease, and should be resorted to as early as possible, after evacuations have been procured." They relieve the fever, by relieving the pain and irritability of the bowels, upon which, for the most part, the fever depends. As regards venesection in dysentery, there appears to be the same danger of employing it extensively in this disease, as there is in the commencement of fever of whatever variety, which was formerly so much in vogue; that is, if the complaint be not cut short within a few days, there is a natural, and sometimes a rapid, tendency to debility and prostration, which it is often difficult to counteract, especially in a disease like dysentery, where we require to be so cautious as to the use of nourishment and stimulants; and this tendency, the abstraction of blood may precipitate and increase. The fever attending dysentery, moreover, has generally been observed to exhibit a tendency to the typhoid form. With respect to the use of large doses of calomel, there seems to be often a misapprehension as to their object and mode of action. Thus,—"Some people," says Elliotson, "would give a scruple dose of calomel at intervals, so as to get the mouth sore as quickly as possible, and, at the same time, to empty the alimentary canal." Now, if it were our object to get the mouth sore, we find, by experience, that we can much sooner effect it by twelve or fifteen grains of calomel, given in divided doses every hour or two, than by twenty grains repeated several times; and we would certainly not give the same remedy with the double object of simultaneously salivating rapidly, and of emptying the alimentary canal; the one being rather opposed to the other. Holland, again, says,—"I believe that a mistake is frequently made as to the manner of operation of calomel and other mercurials, in ascribing effects to their action on the liver, which are, in fact, chiefly due to their influence on the mucous membrane, and glandular follicles of the intestines."

Now, we conceive it to be principally on these parts that

the calomel acts when we give a scruple dose, for we see that it very seldom salivates even when the dose is repeated, and oftentimes only produces a temporary flow of bile, or what appears to be bile; for, as Holland says, "the secretions and discharges thence (from the intestines) arising, are often mistaken for those from the liver" Thus, the action of the remedy is principally *sedative* in most cases, allaying the irritability of these parts, and, as a secondary effect, carrying off their foul secretions.

Art. IV.—*Remarks on Occlusion of the Gravid Uterus.* By Gustav C. E. Wèber, M.D., of New York.

In looking over the old numbers of the *New York Journal of Medicine*, I find in that for March, 1855, a long and elaborate article on *Occlusion of the Womb*, which seems to have for its motto, "Obliquity of the os uteri the cause of occlusion of the womb." Although not denying miracles occurring every day, there is a probable existence of such a disease, known by the name "atresia uteri," or conglutination of the ostium uteri by false membranes.

As I have had an opportunity of observing a very interesting case of true conglutination of the mouth of the womb by pseudo-membranes, during my service as attending physician in the wards of the "*Gebaeranstalt* des Allgemeine Krankenhauses" in Vienna, I think it probable that the readers of this Journal, whose attention has been called to the subject, by the entirely new theory of Dr. Willard, might be pleased by a short description of my case.

In September, 1852, Mrs. N. was received into the wards for women in their last weeks of pregnancy, to await her expected confinement. Mrs. N. was for the first time gravid, and was a stout, robust country woman. Upon examination, I found to the right, and posteriorly to the pelvic axis, the ostium externum uteri occluded by a strong membrane, which would not allow my finger to enter. The cervix uteri had the right form for that state of pregnancy, and all

other parts were properly developed. One morning, two weeks after her reception, she was brought, suffering strong pains, (which commenced at about midnight,) to the lying-in ward. Upon examination, the cervix had entirely disappeared, and no sign of an ostium could be found, except, in a small dimple, which was entirely impervious, and around which the womb seemed to be very thin, so that fluctuation could be easily felt. I related the case to Prof. Klein, Director of the Institution, and to Dr. Charles Braun, first assistant physician, who both, on examination, concurred in my opinion, that there existed conglutination of the os uteri. The pains were strong and powerful, with regular intermission of about three minutes. Prof. Klein proposed to make a cruciated incision of one inch in extent, but waited, in order that every member of his class might have the pleasure of "*toucher*" no ostium uteri. After every one present had made an examination, which was about eleven o'clock, A.M. I was called upon to perform the operation, but found on previous examination, to my astonishment, an *orifice* of the size of a half-dollar, lined with a loose hanging membrane, which was thicker at some places than at others. The woman was delivered without difficulty, by the efforts of nature herself, at about 4 P.M., of a strong healthy child.

This was a case of true conglutination of the os uteri by false membranes, where nature herself effected cure by rupturing them. There is not the least doubt that such cases do occur, not as miraculous plays of nature, but by a pathological process which can easily be explained, and only wondered at, that it proportionately so rarely occurs.

Dr. Willard thinks that "*Every one at all conversant with the subject, knows that it is extremely difficult to procure adhesions of the mucous membranes, and that nature has particularly guarded the orifices of the mucous passages, with unwonted care, against the occurrence of such an accident,*" and gives for example, croup and virulent gonorrhœa, forgetting that nature in the first instance takes care that the organizable exudation is coughed

up; in the latter, that it passes away with the urine. In croup, as well as in virulent gonorrhœa, the fibrinous exudation which mostly takes the form of the tubes it is extravisated in, is certainly discharged, but before it becomes an organized membrane, were it allowed to stay at the place of its origin, not giving rise to threatening symptoms, so that nature is forced to throw it out, it would organize and form a pseudo-membrane, under the same conditions as fibrinous exudations generally organize.

(In virulent gonorrhœa, the product of inflammation is not alone fibrinous, but mostly albuminous, which has not so much tendency to organize.)

Adhesions do occur in canals or cavities lined with mucous membranes; it may be through immediate conglutination of the latter, or after their destruction by ulceration. We have plenty of examples of the sort in the total and partial atresia of the vagina, conglutination between the preputium and glands penis, the same between the gums and the cheek, the same between the eyelid and eyeball, etc., etc.

Chronic catarrhal affection of the womb happens very frequently, in young as well as in decrepid women, and the consequence of these affections is excoriation and ulceration, which can lead to a closing up of the os uteri internum and externum, and even of the orifices of the Fallopian tubes, in consequence of which dropsy of the womb with atrophy. We find such stated in all our standard works on Pathological Anatomy, and they are undoubtedly based on truthful matter-of-fact observations, although Dr. Willard thinks that no post mortem examination ever proved that organized adhesions of the entrance of the womb have taken place.

Occlusion of the womb can be occasioned in two ways, either by atresia of the os uteri, or by conglutination of the same, through an organized membrane. Atresia ostii uteri can be complete or partial, and is undoubtedly the product of inflammation, excoriation, ulceration; and, as the result of these conditions, formation of cicatrices between the lips of

the os, and also with the neighboring wall (mostly the posterior) of the vagina. The strength of such union certainly depends upon the intensity of the pathological process, may be caused by injury, or in consequence of the chronic catarrhal affection of the womb, of which we have spoken. Of cases of complete and incomplete atresia there are many on record:—

Hippocrates himself speaks of a *os uterorum connivens* and conclusum, although it is not evident that he meant the state of the os we describe; perhaps rigidity of the same. But Aetius Von Aemida, the celebrated physician of Justinianus, and, also, Albucasem, were certainly acquainted with atresia of the womb, for they invented instruments for relieving such. The first recorded detailed histories of such cases were given by Amand, Ruysch, Morgagni, Lauverjat, Gautier and Van Munster; and, in our days, by Lobstien, Grimme, Berger, Reiner, Rummel, Meissner, Kilian, Kaerbel, Gooch, Velpeau, and others.

In a *Dissertatio Inauguralis Medico-Obstetrica*, from Matthias Noisten, of the year 1831, I find a case recorded which happened at the Clinique of the University Bonn, Prussia, 1830. Noisten says of his case:—"Die vigessimo primo Jan., 1830, hora matutina secunda, dolores præsagientes apparuere; qui per totum diem interdum reversi sunt. In exploratione interna caput dilucide agnoscitur, et uteri orificium, quod facillime consequendum erat, parva fovea, in ossis sacri excavationem directa, satis clare, sed clausum adhuc sentitum est. Postero die, dolores fortiores et crebriores fiebant; nihilo tamen minus orificium uteri clausum remansit; sed inferius uteri segmentum ita expansum et extensum erat, ut facile quis illud pro velamentis proxime rumpendis habere posset, nise locus ille lenticularis omni tempore quam maxime distincte fuisset sentiendus." And further:—

"Dolores ad partum, qui totum per diem adfuerant, ad vesperam fortiores et celeriores revertebantur; nihilo tamen minus orificii status idem semper erat; quare Prof. Dr. Kilian, Director Clinici Obstetricii Bonnensis, atresiam uteri

perfectam suspicatus est. Accuratissima exploratione cum cathetere instituta, conjecturam probatam invenit. The operation consisting of star-like incisions, the centre of which laid at that parva fovea, which was mentioned, the forceps applied, and a dead female child extracted.

Kilian's Geburtslehre.—In the *Prager Vierteljahrschrift*, of 1855, I find vol. 3, page 75, a case of Dr. Schweitzer cited, where an atresia of the os uteri existed, and the most powerful pains during four days, unable to rupture the cicatrices between the lips of the mouth of the womb, an incision then was made, and a macerated seven month's child extracted; the mother, after the operation, entirely well. Twelve years previous to her last confinement, the woman was badly delivered by craniotomy, in consequence of which she had a recto vagina-fistula.

Conglutination of the orifice is, also, either complete or partial; complete, when not the smallest sound is able to enter; and partial, when there are one or more openings through which catheters or sounds can be introduced, and the liquor amnii trickles through during labor. Conglutination widely differs from true atresia uteri; the former closes the orifice by exudation of plastic lymph, (be it a "*blunder of nature*," or something else, the fact exists,) which organizes, so that often even not the least trace of it can be found; the latter closes the orifice by formation of cicatrices between the lips of the os, and here, those cicatrices can be easily felt, and the accident diagnosticated. Conglutination is often remedied by nature itself, or by simply pushing one finger against the thin occluding membrane or lower segment of the womb, while in true atresia the womb can only be opened by the knife.

Lachapelle, in her "*Traité Complet de l'Art des Accouchements*," p. 361, etc., gives the first true history of imperforation of the os uteri by conglutination, and also Nægele, in his dissertation, entitled, "*Mogostaciaconglutinatione Orificii Uteri Externi.*" Heidelberg, 1835, gives us eight cases of conglutination, of which the history and treatment are minutely narrated.

A great many other cases observed by men of learning and eminence have been described and added to the history of that pathological condition of the os uteri, which is called conglutination of the same.

As to the diagnosis of occlusion of the womb, I remarked already that it is easy in atresia, but in conglutination, where often not a trace of the imperforate os can be found, a careful, quiet examination has to make out the condition. The so-called "*Venter propendens*" of women who have borne several children, is, in a greater or less degree, frequent; so that it is difficult, on account of obliquity of the womb, to detect, by superficial exploration, the ostium uteri. This obliquity of the womb exists to such an extent, as is illustrated by a case of Kilian,* that the long axis of the same is parallel to the plane on which the woman stands, certainly here exploration with one finger would not be able to detect an orifice, which a thorough examination with the whole hand could not have overlooked.

I have had the opportunity, during my attendance at the Vienna lying-in-ward, to examine more than eleven hundred (1100) parturient women, and never have I found such an obliquity of the os uteri alone, without obliquity of the womb, that detection of the same was very difficult. Obliquity of the os, after my experience, can only be threefold: 1.—The os can be turned towards the sacrum. 2.—it can be turned to the right; 3.—to the left of the pelvic axis. Obliquity of the os, at the full period of gestation, or during labor, towards the pubis, never happens, and that proves that obliquity of the os is only a symptom of obliquity of the whole womb. That irregular contractions of the womb are able to draw the os to such an extent, to the right or left of the pelvic axis, or towards the sacrum, so that it cannot be found, is really too much to expect from the power of a few muscular fibres, even if no counteraction at all were present. But in cases where irregular action of the womb exists, which give rise to crampy pains, all

* KILIAN'S *Geburtslehre*, 1840, vol. 1, p. 416.

muscular fibres, longitudinal or others, are all in a contracted (tetanic) state, (the hard uterus can be felt by palpation of the abdomen, even after the short intervals between the paroxysms of the contractions,) one portion of them at times overpowering another, so that the ostium is slightly turned out of the axis of the womb. It seems to me thus improbable, that one portion of the longitudinal fibres, particularly after all pains whatever have ceased, after doses of appropriate narcotics for several hours, should be still in such a state of contraction that the os uteri is so drawn up as to make detection impossible, and the case mistaken for occlusion of the womb.

With regard to the operation "Hysterotomia Vaginalis," I concur in the opinion of our great German author, Professor Kilian, of Bonn, who says in his book, the *Geburtslehre*, vol. 2, page 65: "*The effects of the operation are in the highest degree satisfactory, considering, not alone what is immediately achieved by it, but also the manner in which it reacts upon the organism. With reference to the latter, it particularly merits the highest acknowledgment; and it would be only desirable that everything which prejudice and inexperience brings forth against it might be destroyed.*" I have never had the opportunity of performing Hysterotomy, where there was an occlusion of the womb, either by atresia or conglutination; but I performed it in two cases where the strongest pains, all the dilating manipulations, and medicinal application were not able to bring about a sufficient dilatation of the os for the expulsion of the child, and in both cases, I was satisfied with the result of my proceeding. In one case, the contractions of the womb were enough after five incisions, of from two to three lines in depth, for the expulsion of a living child; in the other case, after four incisions of the same depth, application of the forceps brought forth a dead child. Both cases happened with primipara of advanced age.

I need hardly add, that, although I consider the operation safe and expedient, I still think a misuse of it unwarrantable; the indications must be clearly pointed out, and then

acted upon, not too late, but not too rashly. The modes of operating are many, so are the instruments for the purpose; but as these lines are solely intended to discuss before the readers of this Journal, the existence of occlusion of the womb by atresia, and conglutination of the os, I think that further remarks and descriptions on the modus operandi are not necessary.

I will only add, that in atresia the incisions are made in the form of a cross or a star, through the cicatrices which can be felt. In conglutination the incision must be made in the middle points of the ring (extended through the developed lower segment of the womb) which is formed at the junction of the vagina with the uterus.

This middle point must be the place where the ostium ought to be. Dr. Willard conveys the idea that this point cannot be found.

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ART. V.—*Analysis of One Hundred and Thirty-one Cases of Hydrophobia.** By J. LEWIS SMITH, M.D., Physician to the Northwestern Dispensary.

(*Continued from* vol. xvi. *page* 62.)

BEFORE proceeding to an examination of the thoracic and abdominal viscera, we will call attention to a remarkable appearance noticed in several instances. In at least nine cases, an emphysematous swelling made its appearance upon the anterior part of the neck, immediately above the sternum. This could generally be traced into the anterior mediastinum, and it extended in a greater or less degree around the neck and upon the chest. In one instance (the patient treated by Prof. Jackson,) the right arm even was involved.

In several of the cases the emphysema was noticed before death, and it is not certain, in any instance in what way it was produced. From its situation, and from what is known of emphysema occurring in other conditions of the system, the supposition is reasonable that it was due to the escape of air from the respiratory organs. And this supposition is

* Read before the Society of Statistical Medicine.

strengthened by the fact that the breathing in the paroxysms of hydrophobia is accomplished with so much difficulty, that an occasional rupture of the air-tubes would be likely to ensue.

On the other hand, Dr. Brandreth, who treated one of the patients, removed and inflated the lungs at the autopsy, and in his opinion, ascertained their integrity. Moreover, in case 122, the emphysema continued to increase after death, so as to render it highly probable that it did not occur from a rent in the pulmonary organs. We must recollect, too, that in some instances, an æriform product was found in the cerebral vessels, and the same was occasionally noticed in the vessels elsewhere, and even in the substance of organs. For Prof. Lawrie discovered in the case treated by him, little bladders of gas in the submucous tissue of the stomach. Such products, found in these situations, obviously do not come from the respiratory apparatus.

The weight of evidence, then, seems rather to favor the supposition that the emphysema in question did not arise from lesion of the air passages, and if not, it was, no doubt, due to decomposition of the blood. This last opinion receives weight from the fact that the circulating fluid in hydrophobia has such a dark and putrescent appearance. The subject is, however, more curious and interesting than practically useful.

The appearances presented by the thoracic and abdominal viscera, were for the most part similar to those discovered in the cerebro-spinal axis. The morbid condition most frequently noticed, pertained to the vascular system. The terms used in the records to express this condition are various, but they obviously refer to the same pathological state, viz.:—vascularity. One physician described the organs as congested, another; as vascular; another, as engorged; and still another, as inflamed. In my opinion, there was simply a stasis or passive congestion of the circulating fluid, and I use the term vascular in the following table, as it expresses the appearance without involving any theory.

TABLE I.

	Larynx.	Trachea.	Bronch. Tubes.	Lungs.	Heart.	Fauces.	Pharynx.	Œsoph.	Stomach.	Liver.	Spleen.	Kidneys.
Natural.	14	6	5	7	15	..	10	17	9	10	9	10
Vascul'r.	21	35	18	30	2	6	26	10	21	8	2	5

The vascularity was ordinarily partial unless in the smaller organs. In the œsophagus in eight cases, and in the stomach in ten, it was limited to the part adjacent to the cardiac orifice, or was most marked in this situation. In the lungs it was usually limited, or properly speaking, in reference to this organ, the congestion was usually limited to the posterior, or dependent portions. This viscus was also in six cases more or less emphysematous.

In several of the records it is stated, that the papillæ upon the tongue, and in the fauces were unusually prominent, and in a few that the sub-lingual and sub-maxillary glands were swollen.

Ecchymotic patches were found in various parts of the body. They were noticed under the serous lining of the pericardium and pleura, and the mucous of the bladder and intestines. They were noticed in nine instances in the submucous tissue of the stomach, lending strong support to the opinion, that the substance vomited in hydrophobia, is depraved blood, as we have conjectured in a former page. And it may be added in confirmation of this veiw, that in the case treated by Prof. Lawrie, the contents of the stomach examined microscopically appeared to contain the elements of blood.

The par vagum, which more than any other nerve controls the respiratory function presented generally, as we have seen, a healthy aspect in the cranial cavity. In nine cases, the condition of its terminal portion is mentioned, in two of which its sheath was vascular, but in the other seven, both sheath and substance seemed healthy. The phrenic and sympathetic nerves were occasionally vascular, but in other instances of a sound appearance.

Finally minute autopsical examinations of the nervous

twigs, in the vicinity of the cicatrices, made in four cases, gave a negative result. The filaments were healthy.

The records which have been examined in the foregoing pages, were those of undoubted hydrophobia. Care was taken to reject from our table, all in reference to which there was any uncertainty, so that the deductions might be reliable. The reserved records, are those of anomalous, doubtful, and spurious cases, and to these which can now be better appreciated we shall next direct our attention. The preceding analysis has taught us what hydrophobia ordinarily is; the consideration of anomalous and spurious cases will teach us its occasional character, and with what diseases it may be confounded. Moreover, we hope to throw light upon, and, in a measure, aid in settling, certain controverted questions in reference to this complaint. To make the subject more interesting and profitable, the cases will be considered in groups, those being arranged together which present the same or similar features.

SPONTANEITY.

I have in my possession records of several patients who suffered what was supposed to be the canine disease, occurring spontaneously, or, at least, without any one knowing the time and manner of inoculation. Some of these patients appear to me to have been the victims of diseases simulating, but distinct from, hydrophobia, and their cases will be considered in the list of doubtful and spurious affections. But the following four presented, with the single exception of the inoculation, the conditions and symptoms of true rabies.

TABLE II.

No.	Sex.	Age.	Supposed Cause.	Duration of Prod.	Duration of Dis'e.	Authority.
1	F.	34	Husbands d'th.	1 d.	2 d.	M. Busnout, *Lond. Med. Rep.*, 1814.
2	M.	12	Expos. to cold.	1 to 2d.	12 h. to 1 d.	Dr. Mombert, Walther, and Ammon's, Jan. 1849.
3	"	17	.....	1 d.	36 h.	Dr. Drake, *West. Jour.*, etc., 1831.
4	"	35	Expos. to cold.	No pr'd or brief	About 2 d.	Dr. Condie, *Trans. of Phil. Coll.*, etc., 1849.

The question of the occasional spontaneous occurrence of hydrophobia has been considerably discussed, and, among others, by Mr. Youatt. This gentleman entertains the opinion that it is never developed in the canine race except by inoculation, and, if not among those animals, which are peculiarly subject to it, we cannot reasonably suppose it ever is in man. But facts now and then come to light which tend very strongly to negative the views of Mr. Youatt. We have already stated that in one of the cases in our first table, the disease was communicated by a lap-dog in a neighborhood where a rabid animal had not been known for years, and such dogs have, in other instances, communicated the disease when the idea that they had been inoculated, could scarcely be entertained for a moment.

Again, Dr. Moseley (*Elliotson's Lect., Lond. Lanc., Oct.* 31,) mentions, that when hydrophobia was epidemic in the West Indies, many dogs, which were kept from each other, were seized with it; and dogs brought from Europe and North America were affected when still on board the ships.

A few positive facts are of more weight than a multitude of a negative character; and though Mr. Youatt is confessedly very high authority, it is difficult to explain such facts as those above, unless we admit that the complaint is occasionally spontaneous among dogs. This opinion receives weight, though not proof, from the occurrence, now pretty clearly ascertained, of epidemics of hydrophobia in localities where the disease had not been known for years.

If we admit that rabies may arise among dogs without inoculation, it by no means follows that it may occur in a similar manner in the human species. The vaccine disease is sometimes epidemic among cattle, while men take it only by vaccination. We must consider the facts in reference to man himself.

Pinel and Savirotte, of the older medical writers, published records of supposed hydrophobia brought on by other means than inoculation. The descriptions of these cases which I have obtained are brief, for most of the observations made

by physicians, prior to the present century, were so meagerly reported as to be of little use to posterity, and often to leave us in doubt as to the real nature of the affection.

Pinel's patient was "a young soldier, who," it is stated, "was never bitten by a dog, and who, disliking the military service, secluded himself. His comrades beat the drum, and entered his chamber at midnight. He was seized with convulsions, accompanied with a burning and constriction of his throat, dread of liquids, and copious expectoration, and died after an increase of symptoms." Whether the disease in this instance was true rabies, or whether it was a condition analogous to hysteria, is by no means certain; but if the former, it would still be unphilosophical to assume that he had not been inoculated, for, as we shall see, there is reason to believe that the poison may sometimes be received unconsciously.

The man treated by Savirotte was taken sick after a day of great fatigue, but it is not stated whether he had ever been bitten, so that if he suffered genuine hydrophobia, the exposure and fatigue may have been, for aught we know, merely the exciting cause of the disease.

That among the large number of cases whose histories I have collected there were only four, undoubtedly genuine, in which the disease was not known to be communicated, implies that its occurrence in any other way must be very rare. And if we examine the records of these four, I think we shall have strong reason to believe that they also were inoculated.

The first patient in the table was taken sick, July 12th, 1812, on learning the death of her husband. During her illness, and prior to it, she allowed her mouth to be licked by a dog, which became rabid on the 22nd, and died on the 26th, of the same month. The priority of the disease in the patient to that in the dog, conveys the impression that as she had not been bitten or injured by any other animal, the affection with her was spontaneous, and that she inoculated the dog. But we have seen that animals may communicate

rabies before showing any symptoms of it, so that there is nothing unreasonable or far-fetched in the supposition that the patient was the recipient of the poison from the dog, instead of the dog from her.

The gentleman treated by Dr. Drake was a tanner by occupation, and was seized with the complaint shortly after the occurrence of an epidemic of it among the lower animals in the neighborhood. The doctor in remarking on the case, makes the very plausible statement, that the disease may have been communicated by the handling of hides, especially as the patient had a sore on his finger six weeks previously to the attack.

We see then that in two of the four cases the occurrence of the disease can be explained without resorting to the doctrine of spontaneity; and it is the duty of the medical statistician, as of the physicist, to explain facts or occurrences by established principles, rather than by surmises.

As to the other two patients, it is quite possible that they also were inoculated. They may have been slightly bitten or scratched, without recollecting it, or they may have taken hold of some object on which the venomous secretion rested. When we recollect that the rabid animal is constantly wandering, and biting in his way the inanimate as well as animate, we have grounds to believe that inoculation may take place, and has, in the last mentioned manner.

Facts, then, do not as yet establish or render probable the doctrine that hydrophobia may in rare instances be spontaneous in man.

Before leaving these cases we may mention incidentally that emphysema was noticed about the throat and neck of Dr. Drake's patient the day preceding his death; and at the post mortem examination, this was traced into the anterior mediastinum.

FAVORABLE CASES.

It is a matter of interest, and of practical importance, whether hydrophobia is necessarily fatal. That its occurrence may be prevented by a little treatment, when unequiv-

ocal prodromic symptoms have appeared, is clearly ascertained. In the records already examined by us, instances of this are mentioned, and occasionally the threatened attack was more than once averted.

Hear, also, the remarks of that eminent physician, and profound medical philosopher, Dr. Elliotson, on this point. (*Lond. Lanc.*, May 1829,) "Usually, I believe, (he speaks of the premonitory stage) there are symptoms of weariness, general indisposition, dizziness, chills, and flushes; sometimes a pain has been felt in the bitten part. I think it very possible, from an occurrence which happened in my own practice, that these symptoms may go no farther; that the disease, if I may so speak, may go off. Two little girls, standing at their father's door, were bitten by the same dog; a dog passing, snapped at both of them, and bit them in the face. She who was bitten the second, became hydrophobic, and died. The other, at exactly the same time, experienced exactly the same premonitory symptoms as her sister, —heaviness and general indisposition, but they all went off.

"If, then, an attack of hydrophobia may be prevented after its premonitory stage has commenced, may not the disease itself, though fully established in some instances, be thrown off, and the patient be saved?

"The observations of Mr. Youatt, upon the dog, have shown that, in this animal, hydrophobia may occasionally have a favorable termination. In commenting on the second case in table, (No. III.) he says, speaking of one of his canine patients: 'The dog was suspected to have been bitten. It was in a manner certain that it had been bitten, but the wounded part could not be detected, and he was not operated upon. The disease approached; it established itself. There was the perversion of temper; the suspicious scowl; the eager watching of imaginary objects; the darting at some phantom of the imagination; the depraved appetite, and the characteristic howl. The malady pursued its regular course during more than twenty-four hours, and then came a gradual calm—the dog quieted down to his usual appearance and

habits—he became well. * * * Another and another case succeeded. Once in a hundred times, or more, the constitutional affection admitted not of a doubt * * and the patient got well."

The fact that hydrophobia may terminate favorably in the dog, does not furnish certain proof that it may likewise in the human species; but certainly it is an argument of great weight, in support of such a doctrine. The belief is pretty general, that canine madness is uniformly fatal in man. Instances of recovery are reported in the journals, but they have attracted little attention, from the fact, that other diseases possessing a strongly-marked nervous element may be mistaken for true rabies. No doubt there has frequently been an entire misapprehension of the nature of the affection, and several records in my collection confirm this opinion; but the most cautious statistician, it seems to me, must admit that in a part, at least, of the following cases, genuine hydrophobia was present.

TABLE III.

Favorable cases.								
No.	Sex.	Age.	Part Bitten.	Incubation.	Duration of Prod.	Duration of Dis'e.	Treatment.	Authority.
1	M.	Ad.	Hand.	3 m.	6 d.	....	Purgatives, stimulants, etc.	Wm. Grant, G. Doane, *Med. Gaz.*, July 10, 1830.
2	F.	35	Fing'r.	8 d.	5 d.	....	Purgatives, Arsenic, Incision.	T. Tompkin, E. G. Varenue, *Lon. Lan.*, Aug. 1835.
3	M.	Ad.	Arm.	12 to 14 m.	2 w.	....	Purgatives, leeches, opiates.	Dr. Du Heaume, *Med. Gaz.*, Dec., 1837.
4	"	17	"	3 w.	Several d.	....	Purgatives, hyd. chlor. lib., opiates.	Dr. Hooper, *Medical Times*, May 17, 1847.
5	"	..	Th'mb	12 d.	2 d.	....	Hyd. chlor. lib., incision.	W. F. Haines, *Lond. Lan.*, 1847.
6	F.	30	Wrist.	About 3 m.	About 3 w.	....	Opiates, anæsthetics, etc.	Prof. Jackson, *Amer. Jour.*, 1849.

An abstract of the histories and symptoms of these six cases will enable us to judge whether the disease was really r ophobia.

Case 1.—The wound which was inflicted by a dog, whose condition is not given, healed after the lapse of several weeks.

Nov. 14th, about three months subsequently to the reception of the bite, the patient was seized with headache and rigors, which were relieved by a purgative. On the 20th of the same month, the presence of water distressed him, and attempts to drink caused the characteristic spasms of the neck. The cicatrix had an inflammatory appearance, and he was seen to rub it. He was timid and distrustful, and a viscid secretion began to form in his mouth and throat.

This condition continued till the 21st, when he was placed in a warm bath, and all these untoward symptoms vanished.

The amendment lasted till the evening of the 22nd, when he again became restless, and, on the 23rd, relapse was complete. The dread of water was so great, that the bath was not repeated; but 280 drops of laudanum were administered. He slept six hours, and awoke refreshed and free from spasms. On the evening of the 25th another relapse occurred, attended by a flatulent condition of the bowels.

The records do not state how long the spasms continued; but the patient grew progressively weaker, so as "to require brandy and broths plentifully." On December 14th he was nearly insensible; pulse, 130; extremities cold, and hiccup constant. He was fed with chicken broth, jellies, and stimulants; and, contrary to all expectation, a gradual improvement followed, and on the 8th of January he was able to leave the place.

Case 2.—Bitten by a favorite dog, which was killed in a week, with the salivary glands enlarged. The wound was trifling, and healed in three days.

June 30th, eight days after the injury was received, she was suddenly seized with cephalalgia and dimness of vision. These symptoms were momentary; but they recurred at intervals for several days, accompanied by an uneasy sensation in the neighborhood of the bitten finger.

July 4th.—When drawing beer from a cask, she became

giddy; but recovered, on stopping the cock. The following day her eyes were bright, prominent, and intolerant of light, and she complained of pain in the left side.

July 6th.—Constipation; aversion to food and drinks, and each attempt to take them followed by a convulsive fit.

7th.—Intolerance of light, and aversion to liquids increased; complains of pain extending up the arm from the bitten finger; pulse weak and fluttering, and neck tumid; the paroxysms last about five minutes.

8th.—One of the cicatrices slightly inflamed, and the symptoms of yesterday continue. She has been treated with aperients and the liquor arsenicalis. Treatment today,—excision of the cicatrices, and the application of veratrine ointment over the neck and arms.

9th.—Has improved since the excision; feels less pain in the throat, and none in the arm, and has had only one paroxysm.

15th.—Continues improving, but deglutition difficult; gums swelling, probably from the arsenic which she has continued taking.

Aug. 10th.—Has had no return of the complaint. Mr. Youatt commented at length in the *Lancet*, on the above case, entertaining, apparently, no doubt of its genuineness.

Case 3.—Was bitten by his own Newfoundland dog, which two years subsequently, when the records were published, was alive and well. It inflicted the bite from provocation, and did not show, before or afterwards, any suspicious symptoms.

The cicatrix, before the occurrence of hydrophobia, had occasionally been painful, and at the inception of the disease it presented a reddish appearance.

After two weeks of anxiety and melancholy, he was taken, February 11, 1837, with attacks of convulsive respiration.

12th.—Respiration as yesterday; face flushed; pulse quick; bowels flatulent; pupils dilated but contractile; rational; quantity of saliva increased. Twenty-four leeches

were applied to his temples; blisters to the calves of his legs, and purgative enemata administered.

Nine, P.M.—Much excited by the vesication; countenance anxious, and eyes brilliant. Has spasms when water is offered.

13th.—Symptoms as before. The noise of a carriage in the street, the touch of an orange to his lips, and pressure upon the cicatrix, occasion paroxysms.

14th.—Pulseless, insensible, and extremities cold. Had no spasms during the night, but at twelve o'clock to-day a paroxysm occurred, lasting two hours. After this he gradually convalesced. During the latter part of his sickness he took opiates, stimulants, and mercurials.

Case 4.—The wound was severe, and inflicted by a dog known to be rabid.

The disease was ushered in by restlessness and melancholy, lasting several days, and when fully developed, the paroxysms were severe. The sound of water, the least noise in the room, opening a door, increase or diminution of light, and the sight of a glass vessel, caused either convulsions or great distress. He complained of thirst, of a constriction across his chest, and of itching in the cicatrix. He was ordered tr. camph. and tr. opii. aa. ʒij, to be repeated in half an hour, and a mercurial.

On the following day he was better. The cicatrix had given way and was discharging. There was no delirium; the paroxysms were less frequent and severe; and he slept four hours in the morning.

After this he gradually convalesced. He was salivated, but not till the improvement had commenced. A year subsequently he was seen by Dr. H. in his usual health.

Case 5.—Bitten slightly in September, 1846, by a dog which had been four or five weeks in a singular state, and at the time the bite was inflicted, showed symptoms of rabies, viz.: spasms, dread of water, and increase of saliva.

On the twelfth day after the injury, the wounded part became hot and prickly. The day following it was better,

but the third day it became worse again, and headache, thirst, and restlessness commenced. He now complained of pain in his throat; his deglutition was difficult; and five or six times hourly, the characteristic spasms took place.

On the nineteenth day after the infliction of the bite, convalescence was established. The treatment consisted in scarifying and poulticing the bitten part, and in mercurialization.

Case 6.—The wounds received by this patient were slight, and inflicted by a strange dog, running in the street.

After three months the cicatrices became red, slightly tumified and painful. One festered and discharged a few drops of greenish matter, and then healed, giving no farther trouble. The other remained hard and painful, and pain extended from it up the arm to the shoulder.

This condition continued a few days, when one morning, as she was drinking, she experienced a sudden shuddering sensation. The following evening the same sensation occurred from putting her hand in water, and violent spasms of the throat, with a sense of suffocation on attempting to drink; currents of air produced no unpleasant effects; the fauces were dry, and she retained her senses perfectly. Counter-irritation and anti-spasmodics were prescribed.

On the following day (October 29th) there was an apparent amendment. She had had no spasms since the previous day, and had passed a quiet night. She took water readily, and her pulse was natural; but the affected arm had lost its sensibility, and there was deep-seated pain in the course of its nerves.

She was ordered antispasmodics with rhubarb and mercury, but the first dose brought on violent spasms threatening suffocation. The paroxysms now recurred frequently, produced by trifling causes, as the waving of the hand, and sometimes occurring spontaneously. Chloroform was administered, and the red and tumid cicatrix excised; but the spasms continued, and the sight of a silver spoon, and the brushing away of flies, were sufficient to induce them.

The record for October 31st, states that she had passed a comfortable night, and that the wound was discharging freely.

From this time she gradually convalesced. Cicatrization had taken place, and the pain had ceased in the arm by the second week in December, but the shoulder and axilla remained tender, and occasionally painful till the first of January, when her health was permanently restored.

The striking similarity, we may say identity, of symptoms in the above cases, with those which we have seen to be characteristic of hydrophobia leave little doubt, that these patients suffered that appalling disease. This opinion receives confirmation from the fact, that at least four of the dogs which inflicted the bites were at the time, or soon after, either rabid, or in such a condition as to excite the strongest suspicions of rabies.

But the most convincing proof that the above were genuine cases lies, perhaps, in the fact, that in all six, the bitten part was the seat and source of some unusual sensation, or that it presented some unusual appearance, at or before the commencement of the disease. We may then consider it settled, that hydrophobia, though so commonly fatal that one affected with it can indulge no reasonable hope of recovering, does, in rare instances, have a favorable termination.

If we are right in the opinion, that the above were genuine cases, an opportunity is afforded us of learning the course of hydrophobia when not abridged by death. The marked difference in duration of the cases may be explained on the supposition that the poison was of unequal intensity. If the morbific cause were slight, the symptoms would doubtless be transient; but if more intense, so as to disorganize the blood, as in the cases in our first table, we should expect a more severe and protracted form of the complaint. Or the difference may be explained on the supposition of degrees in the susceptibility of the system.

COMMUNICATION BY ENRAGED ANIMALS.

Another unsettled question is, whether an irritated animal, though healthy, and continuing so, may communicate

the disease. Instances are not infrequent, as the statistics have shown, where dogs apparently sound, and acting solely in self-defense, have effected a true inoculation. But subsequently they have shown indubitable symptoms of rabies. A few cases have also been reported, in which the offending animals, though watched for many months, continued to all appearance, in their usual healthy condition. This was true of the dog, by which Dr. Du Heaume's patient (table iii.) was bitten. After the lapse of two years it was alive, and apparently well, not having shown a single hydrophobic symptom. At first view, it seems difficult to explain such a case, unless upon the admission, that the bite of the infuriated as well as the rabid animal may convey the venom. But such an inference is not necessary. If, as there is abundant evidence to show, a dog, whose system contains the hydrophobic poison, but yet in its incubative state, may communicate the disease, and, as is equally certain, rabies does sometimes fail of being established, though the system is inoculated, we have the conditions in which, if co-existing, the animal might communicate the affection, without ever manifesting a symptom of ill-health. And an animal in this state cannot, with propriety of language, be called healthy, any more than the person whose system is impregnated with the malarious or syphilitic poison, but who has not yet suffered a paroxysm.

Without denying, then, positively, that a sound animal made furious by provocation, may secrete and impart the hydrophobic venom, we may safely say, there is no evidence of it; and here we may rest the argument, as the burden of proof lies with those who attempt to establish a new doctrine. Moreover, if we consider that in all climates and in all conditions of life, the dog is a constant companion of man, and that though, when treated with kindness, he is a patient sharer in the changes and trials which befall us, yet, if abused, he is quick to retaliate, we should expect hydrophobia to be more frequent, if it were true that the bite of a healthy dog may inoculate.

COMMUNICATION BY MAN TO MAN?

It is a matter of considerable practical importance, whether an individual suffering hydrophobia can impart the disease to his attendants. It is well known, that Magendie, by his experiments in Hôtel-Dieu, established the fact that human saliva taken in rabies, will inoculate dogs with the complaint, but I have found in my researches, mention of only one instance, where it was believed that man had given the disease to those of his own species. An account of this case, or these cases, was published in *Silliman's Journal* for Oct., 1832, by Rev. William Case, of Chester, Conn., at which place the patients resided, and was copied extensively into the medical periodicals of that day. A brief abstract of this communication will be interesting, and will enable us to judge whether the disease was really the canine madness.

In 1807, W. C., aged eleven, was bitten by a dog having the symptoms of rabies, and which was soon after shot. Fifteen years subsequently, the disease made its appearance, preceded by mental irregularity. "He had a short season of strange excitement during public worship on the Sabbath. At a neighbor's house the next day, he suddenly jumped, screamed, broke windows, and ran out at the door with great nimbleness of foot. He soon became quiet and returned, and when his friends remonstrated with him for this conduct, he said he could not avoid doing this, for he had been bitten by a mad dog. During the progress of the disease, he gnashed his teeth; discharged large quantities of saliva; had distressing spasms; and was set on biting everybody and everything." He made holes in the pillow-cases with his teeth, and took pleasure in attempting to spit on his attendants. If he succeeded, he was seized with a fit of laughter. When he had been in this state fourteen or fifteen days, death closed the scene, Sept. 1st, 1822.

L. T. C. was bitten by W. C., and, three and a-half years subsequently, he became similarly affected. "He would hop backwards and forwards, and talk incoherently for a few minutes, and then say he was sorry he conducted so, but he

could not avoid it." He experienced great difficulty in swallowing, and spurted the water which he took, into the face of his attendants. He frothed at the mouth, and watched his opportunity to bite. His death took place after the lapse of two weeks.

Another person, bitten by W. C., sickened five years subsequently, and died in five days. It is stated that he experienced dread of water, spasms on attempting to take it, and showed a disposition to bite.

Again, another attendant of W. C., and bitten by him, grew sick after the lapse of five and a-half years, and died on the eleventh day. The following account of his symptoms, Mr. Case obtained from the attending physician. "The sight of water produced a recurrence of distressing spasms, or, in the language of attendants, made him rave. In the intervals of spasms he was rational. In one, he requested his father-in-law, to remove his razors, for he did not know what he might be led to do in his turns. In another, he gave this caution to his wife: "I wish you to keep away from me when I have the turns; I know not why it is, but I want to bite, and fear I shall bite you." His attendants think he strove to curb the disposition to bite. It was however very evident! * * "The shaking of pillows and bed-clothes in his teeth, was a frequent exercise, * * and he watched the opportunity to spit on persons who came into the room. During his sickness, and especially the night before his death, he hallooed dreadfully."

These were, certainly, remarkable cases; but I am far from admitting that the complaint was genuine rabies. Look first, at the long intervals between the infliction of the bites, and the appearance of the disease; fifteen, three and a-half, five, and five and a-half years. Mark, also, the duration of the disease; fifteen, fourteen, five, and eleven days. In both respects we see a discrepancy between these cases and those which we have analyzed as genuine.

Nor did the symptoms bear a strict resemblance to those usually occurring in rabies. The patient with hydrophobia

does not bite and shake his bed-clothes; is not seized with fits of laughter, nor does he imitate the barking of dogs.

Whatever may have been the nature of the affection, much of their suffering, and, to a certain extent, their symptoms, were obviously the result of fear. Believing that they were the victims of canine madness, and doomed to a speedy and terrible death, it is not strange that they experienced hydrophobic symptoms, even though suffering a distinct disease. We shall see hereafter, in our examination of spurious cases, that the mere dread or expectation of hydrophobia may give rise to a simulating condition of the system. It must be recollected, too, that the facts in these cases were obtained and published by a man not trained in the severe school of science, and that they were learnt from hearsay, mainly, instead of personal observation. Records coming from such a source must be regarded with allowance, especially if the disease afford such a field for the play of the imagination, and for exaggeration, as hydrophobia.

That no unexceptionable instance has been recorded of the communication of rabies by man to man, although the devotion of friends must have furnished again and again, the opportunity for inoculation, can hardly be explained, except on the supposition that the human saliva in hydrophobia is innocuous to those of our own species. In this belief we must rest till more light is thrown upon the subject.

There are other interesting questions in reference to this disease, which have been subjects of much speculation; but as our statistics do not throw light upon them, we shall not enter upon their consideration. It is left for us to consider only the remaining doubtful, and then the spurious, cases.

ART. VI.—*On the Effects of Lead on the Heart.* By JOHN W. CORSON, M.D., late Physician of the Brooklyn City Hospital; Physician to the New York Dispensary.

NOTHING is unimportant in the science of saving life. If we note faithfully the slightest change in the face, skin, eye, tongue, breathing, voice, secretions, or distant radial pulse—surely we should examine carefully the heart itself. It has strong claims. We have long been convinced, that not merely in cardiac affections, but in disease generally, too little regard has been paid to the varying force and volume with which it strikes against the ribs, or, in other words, to the *impulse* of the heart. There is something still to learn. The Chinese physicians are said to pass the hand over the heart as often as they feel for the pulse at the wrist. Nor do these always correspond. As Wardrop has shown, and as we may often observe, the heart may violently labor when the pulse at the wrist is feeble.

While, indirectly, it might explain some curious effects of lead upon the heart's action, which we shall presently mention, we cannot here stop to discuss the knotty physiological question of the exact cause of the cardiac impulse. Skoda has with learned detail, given more than half a dozen ingenious theories on this subject by Corrigan, Stokes, Bouillaud, Filhos, Gutbrod, Messerschmid, Gendrin, Von Kiwisch, and others.* In passing, we may simply remark, that the Committee of the British Association, and others, having at last pretty well decided as to the causes of the two sounds of the heart, we trust some new light may yet be thrown upon the vexed question as to the true origin of the heart's impulse, by the proposed inquiry under the auspices of the American Medical Association.

Theorize as we may, we must admit that its variations are important signs of disease. *With enlarged dull space*, as we know, a broad heaving impulse of the heart means organic hypertrophy, and weak, wide, flapping dilatation; while, *without extra dullness*, strong bounding denotes mere congestion of the organ; smart rapping, functional irritation; and soft tapping, cardiac debility. And these lessons from the heart not only aid us in diagnosis, but in treatment. When we remember that in apparent death from catalepsy, electricity, or drowning, its faintest beat is the last sign of life, and calls for the most powerful restoratives; and that, as Dr. Stokes has shown, the weakness or absence of its impulse or first sound, is the true test for wine

* *Abhandlung über Perkussion und Auskultation.*

in typhus fever; and add to these, the facts we shall presently state to prove that a faint cardiac impulse with purple gums, promptly suggests lead poisoning, and the use of the iodide of potassium and strychnia; we shall come to regard the action of the heart as no mean guide in the administration of many remedies. As we have recently had occasion to remark in these pages, allowing a certain excess to compensate for the embarrassed circulation in organic enlargement, *the impulse is the true pulse of the heart*, showing by its force or weakness, when either depletion, sedatives, or tonics are necessary.*

To disprove or confirm these views respecting the importance of the cardiac impulse, the writer was induced, some time since, to undertake a series of examinations of the heart promiscuously in all forms of disease among the throng of patients at a large Dispensary. Many interesting facts presented. We soon found that house painters and others with either *paralysis* or great *muscular debility*, from lead poisoning, had uniformly a more or less weakened impulse of the heart, and generally on going up stairs complained of some faintness and cardiac distress. In some instances, too, there were fear of sudden death, nocturnal syncope, night-mare, or oppressive dreams, like those so common in organic disease of the heart. In the earlier stage, where lead colic only existed, from a considerable number of observations it seemed as if the heart had as yet escaped, and these symptoms were absent. And whether they are present uniformly in all cases of lead paralysis and debility, must be determined by more extended observation. Yet if they should be found to be confined mainly to the worst cases in private practice, or to the long neglected and badly nourished poor, prostrated by lead, and seeking medical aid in public institutions as a last resort—still, we trust, this discussion may be useful in showing a new phase of the affection worthy of careful attention. It is the sacred mission of our profession to study and toil for the poorest. In private practice, too, as will be seen, it may sometimes enable us to relieve terrible suspicions of incurable disease of the heart.

The discovery of the leaden streak of the gums by Dr. Burton, was a real boon to humanity. We cannot have too many new tests for so insidious and distressing a malady. When the heart, too, can complain, we should listen to its language. If a few years have given us the vastly improved treatment of Melsens, Golding Bird, and Tanquerel, so, too, every year finds new employment for this ductile poisonous metal. Lead is all around us in a hundred protean forms. We find

* *On Protracted Valvular Disease*, May, 1855.

it hidden in arts and manufactures innumerable. It moulds the toys of our childhood and wraps us in our coffins. It reddens sugar plums and sealed parchments, paints in varied hues the cottage and palace, blackens alike the fingers of the civilized printer and savage hunter, and whitens the Brussels lace on the snowy neck of the city belle.* Sometimes it steals into sugar and tobacco, and literally spoils even our bread and butter. Deceptively it sweetens the choice wines of the epicure, or bubbles from natural wells, and from beer and soda fountains; and, through a thousand leaden arteries piercing the walls of our houses, it brings the Croton and Schuylkill to the very lips of the lovers of cold water. We seek not to exaggerate, but only faithfully to caution. While thousands exposed wonderfully escape, too many of the susceptible or careless suffer. But we cannot linger even to warn. Our cases must speak for themselves. We have vowed—as we always do—not to exercise what a good man once called the "gift of continuance." The two first, it will be perceived, had previous organic disease from rheumatism.

Case 1.—*Mitral Regurgitation with Hypertrophy, from Rheumatism, aggravated by Lead Poisoning.—Great Improvement.*—J. S., aged 34, formerly seaman, latterly wafer-maker, muscular, but tottering in his gait and cachectic in his appearance, was admitted under my care at the New York Dispensary, June 7, 1854. After several attacks of acute rheumatism at sea, without any heart symptoms, he had worked latterly in a wafer and sealing-wax manufactory at New Rochelle, where, after being weakened by an attack of intermittent, he had been finally laid up with colic, from the fumes of heated lead used in the coloring matters. Returning to sea for his health, he again caught rheumatism, followed by dropsy, and had left the Dreadnought Hospital Ship, in the Thames, with a certificate of "Organic Disease of the Heart," requiring light labor. Obliged to return to the more quiet wafer making, to fill his cup of misery, he had suffered five successive attacks of lead colic, the last of which was two weeks previous to his admission at the Dispensary.

Condition.—There were noted—the dusky, tawny lead jaundice of the skin, and brown encrusted teeth mentioned by Tanquerel; *purple streak of the gums;* pulse ninety-two, weak and small; respiration thirty, difficult; despondency; sense of impending dissolution; fear of sudden death; *faintness on exertion;* palpitation; *broad weak impulse of the heart;* harsh liquid *mitral*, regurgitant murmur with the first

* *Annales d'Hygeine.*

sound, *loudest over the apex;* diameter of precordial dull space, three and a-half inches; apex pointing four and a-half inches to the left of the centre of the sternum; liver enlarged below two inches; epigastrium tender; appetite feeble and variable; constipation; slight incipient paralysis of the limbs, affecting motion more than sensation, though accompanied with some numbness and wandering pains, and without the "drop wrists."

He was ordered to take, in an aqueous mixture, eight grains of the iodide of potassium, with four grains of the extract of taraxacum, a fluid dram of the tincture of bark, and ten drops of the tincture of hyoscyamus, in sweetened water, three times a-day, two hours after meals. This was continued with the greatest benefit for three months, when it was changed to five drops of the strong tincture of nux vomica alone, taken in water, three times a-day, for three months longer. The effects were remarkable. His jaundiced face became clear and ruddy; the respirations fell off from 30 to 18; the numbness, faintness, and lead streak were gone; the faltering heart, though still enlarged, grew firmer in its impulse; the liver, with its hypertrophy remaining, ceased to trouble; appetite returned, and he gained ten pounds in weight. But the most curious changes were those of the mitral murmur. Sometimes it was distinct and liquid, like the sound of a muffled syringe; then it grew faint and musical, like the low mewing of an exhausted kitten; later still, it intermitted or returned with quiet or excitement, till, during the last few months it ceased entirely. Our patient, previously incapacitated, returned to regular labor in a ship bakery, and, a few months after, was so restored as to engage as seaman in a trip to New Orleans, during which he was accidentally drowned.

Case 2.—Slight Cardiac Hypertrophy and Mitral Murmur from Rheumatism.—Lead Poisoning.—Improved by Iodide of Potassium.—F. K. P., peddler, aged 36, muscular, but pale, was admitted as a district patient at the New York Dispensary, December 15th, 1855; with excruciating pain in the abdomen and lumbar region; face anxious; pulse 90, hard; tongue furred; gums with a broad violet streak; teeth brown-encrusted; obstinate constipation; nausea; urine scanty, and painfully voided; palpitation; cardiac oppression; strong impulse of the heart; dull space a little enlarged, and a faint regurgitant mitral murmur at the apex. There was no paralysis. Within the previous eleven years he had suffered three attacks of severe rheumatism, since the first of which he had labored at times under palpitation and some distress at the heart. For some time previous he drank spirits pretty freely. He had known of no exposure to lead, except,

possibly, from a habit of rising very early, and getting the first draught of Croton water from the long lead pipe of a high tenant-house; and occasional drinks of soda-water from the street fountains. Our diagnosis was lead colic, added to slight organic disease of the heart. Two worthy, intelligent physicians, previously called, quite as sincerely pronounced the gums simply anemic; laid much stress on the former rheumatic and cardiac disease, and thought the pain, nausea, and dysuria showed the present difficulty to depend simply on inflammation of the kidneys.

Being left alone in charge, with some misgivings that we might be mistaken, we were at length gratified with seeing prompt relief from free purging with croton oil and calomel, followed by anodynes; and the generous admission of one of the former attendants, that we were right in our suspicions of lead. The patient was left much prostrated, and unable to walk out for many days. During the succeeding few weeks, he labored under great muscular weakness. Under the use of ten grains of the iodide of potassium, in solution, with five drops of the tincture of nux vomica, and a minute dose of hyoscyamus, three times a-day, he at last rapidly improved. By a curious coincidence, the mitral murmur was inaudible the two last examinations. It may also be remarked, that the irritation of pain in lead colic, as well as the previous hypertrophy, rendered the impulse more firm. When last seen, the case was still mending under treatment.

Although functional murmurs are notoriously changeable and transient, yet the permanent cessation of a true chronic organic murmur long established, with a corresponding improvement of the patient, is a very rare event. It is true that when the heart, so to speak, gives way, and becomes irregular and confused in its action, in the last stage of fatal cases, the murmur will often be masked or lost. And, in more favorable conditions, it will frequently cease with the repose of the patient, to be roused again with excitement. In a few examples, however, nature, in her freaks seems to have, to a certain extent, repaired and refitted even a spoiled valve, and silenced or changed its murmur.

Such cases are recorded by Dr. O'Ferrall, in the *Dublin Quarterly Journal of Medical Science*, and by M. Forget, in his recent valuable treatise.* The first of the above instances happening to be the only one that we had met at the time, was watched carefully for months, and was undoubtedly a fair specimen. The second, for a won-

* *Prècis Thèorique et Pratique des Maladies du Cœur.*

der, may possibly prove so. We may never meet another. We know, indeed, that, especially in delicate females, a heart may be stretched and weakened by simple dilatation till its valves are mechanically unfitted, and regurgitant murmurs occur. And it would be easy to speculate on the possibility of lead producing a certain relaxed, paralyzed or atonic condition of the muscular walls of the heart, or its columnæ carneæ, so that the valves temporarily unfitted, would leak, and afterwards, by the iodide of potassium and tonics, the heart might recover its natural tone, and the valves be readjusted. But in neither case above are we sure that the murmurs did not exist long before the lead affection. Besides, when dealing with health and life, we dare not speculate on such small capital. We love the truth, and the truth only, too dearly to venture to build a theory on so few facts. So we leave the reader to draw his own inferences in regard to the changes of valvular murmurs. In other respects, however, we think that, considering fairly the future cases where lead has deranged hearts previously sound, and where, upon one of the principles laid down by Marshall Hall, the result of treatment has aided diagnosis, analogy will justify two practical conclusions,—first, *that the poison of lead may seriously aggravate previous organic disease of the heart;* and second, *that such cases are likely to be especially benefitted by the iodide of potassium, strychnia, electricity, and other appropriate remedies for the depressing influence of lead.*

While studying the cardiac impulse, the writer happened to contribute, in a paper in this journal, the following illustration:—*

Case 3.—*Debility of the Heart from Lead Poisoning.—Recovery.*—A laborer, aged 34, muscular, having worked in a white-lead manufactory a few weeks, was admitted under our care in the New York Dispensary, early in October last, for palpitation, uneasiness, and *faintness* on exertion, with precordial distress, and *soft tapping impulse of the heart*, otherwise normal, with the *violet lead streak* of the gums, trembling weakness and numbness of the limbs, pulse 74, *weak;* loss of appetite, nausea, tenderness of the epigastrium, and constipation. He never had rheumatism; used no tobacco; indulged in no excess. Partially on the plan of M. Melsens in lead disease, he was ordered ten grains of the iodide of potassium in solution, with a few drops of the tincture of nux vomica three times a-day; and subsequently these were aided by a blister, the size of a cent, over the heart, dressed with

* *On Functional and Sympathetic Affections of the Heart*, Jan., 1854.

belladonna ointment, with the effect of gradually relieving all the symptoms; and he left convalescent at the end of a month.

This case, and those succeeding, seem to prove that, in addition to complicating previous organic disease, the poison of lead may produce special morbid manifestations of its own, in a heart at first perfectly sound.

In the very great difficulty of retaining long enough for cure, out-patients among the necessitous and changing poor, the three following cases, which were treated for a few days only, on the same plan with those we have mentioned, are given merely to illustrate cardiac lead symptoms.

Case 4.—*Lead Paralysis.—Feeble Heart.—Faintness on Exertion.*—W. T., aged 39, shoemaker, of medium development, was admitted as an out-patient in the New York Dispensary, under our care, January 17, 1855, with partial paralysis of both forearms. He knew of no exposure to lead except drinking the Croton water conveyed by lead pipes in a high tenant house. Six months previous, at Staten Island, he had caught a quotidian intermittent, which was finally cured at Bellevue Hospital. Since then, for several months he had complained of muscular pains, trembling, and numbness of the limbs.

Condition.—We noted: lead streak of the gums; loss of motion, affecting the flexors as well as the extensors of the forearm, so as to prevent grasping; indigestion; constipation; pulse 64, weak; inability to mount stairs without faintness; cardiac oppression; palpitation, and a feeble tapping impulse of the heart.

Case 5.—*Drop Wrists from Lead.—Tendency to Syncope.—Weak Cardiac Impulse.*—M. S., aged 22, house painter, slight in figure, much emaciated and pale, was admitted under our care, at the New York Dispensary, August 25, 1853. He had suffered repeatedly with painters' colic during his apprenticeship. Three years since he had first felt numbness and loss of power in the forearms, for which he was treated with sulphur baths and galvanism for some time, with considerable improvement. Returning to the house-painting, he was finally quite disabled by more complete paralysis of both forearms and hands.

On examination, we found lead streak of the gums; tongue clean; appetite feeble; urine high-colored; some arthralgia, aggravated by damp weather; hands drooping and powerless; faintness on exertion; sinking palpitation; and weak impulse of the heart.

Case 6.—*Debility of the Heart from Lead.—Gentle Tapping Impulse.—No Faintness on Exertion.*—B. K., laborer, aged 32,

broad and muscular, having worked in a white lead factory from August to January, and suffered at length severe bronchitis from exposure was attacked immediately after with wandering pains and great muscular weakness, for which he was admitted at the New York Dispensary, March 15, 1854.

There were noted: distinct lead streak of the gums; tongue slightly furred; appetite feeble; flatulence; severe headache every afternoon; pulse 60, compressible; *weak velvety impulse of the heart*, but no special faintness on going up stairs.

In our fear of overstating this matter, we have rejected several slighter cases where there were simply a lead streak of the gums, without either paralysis or serious muscular debility; but in which, with severe dyspeptic symptoms, constipation, and some prostration, there has been, as we have imagined, a slight shade of weakness in the impulse of the heart.

We may venture, too, in this connection to state a fact we have repeatedly verified in this series of observations, of much interest to the profession and public, in cities watered by lead pipes. Many cases in private practice, supposed to be ordinary dyspepsia, obstinate constipation, or bilious colic, are really *unsuspected mild examples of lead poisoning*. A highly intelligent professional friend suffered thus unconsciously for months, from drinking soda-water through lead pipes, in a warm summer, till, looking at his tongue one day, we discovered the lead streak of his gums. We remember prescribing for a "faint heart" in a "fair lady," with blue gums, who was "much debilitated," and who said she was engaged in a "store down town," which at last proved to be a type foundry. A pale young printer, at the New York Dispensary, incapacitated by indigestion and weakness for months, and, as he sorrowfully declared, "having spent all his money with the doctors,"—after showing "leaded" gums, and confessing also to spermarrhœa, wished a careful examination for the supposed "organic affection" of a *weak irritable heart*, occupying his entire sympathy.

In the following illustration, too, but for the suspicious gums, and avocation, it would have been easy to have overlooked the secret cause of suffering, in attention to the alleged "disease of the heart."

Case 7.—Cardiac Distress.—Prostration from Lead.—Night Faintings.—Recovery.—Mr. S., master house painter, aged 29, tall, muscular and temperate, having been under our care in private practice for an attack of incipient cholera during the late epidemic, and having suffered from debility and dyspepsia ever since, applied again a few

months since for an examination of his chest, insisting that "something was the matter with his heart."

Latterly he had grown very desponding, with a sense of utter weakness and cardiac oppression; faltering palpitation; variable appetite; belching flatulence; and turns of nausea, and severe headache. But the most alarming of all were certain paroxysms of fainting during sleep, detected by his watchful wife, which were more protracted and death-like than ordinary night-mare, and accompanied by ghastly paleness and coldness. They required mustard poultices and stimulants for several minutes to rouse him.

On examination, there were found slight lead streak of the gums; pulse 64; weak tapping impulse of the heart, else normal; no positive paralysis, but great muscular debility, producing a sense of constant weariness and prostration. Under the use of free doses of the iodide of potassium and minute proportions of nux vomica, as in the previous cases, after several returns of the fainting, he slowly recovered.

Early in these investigations we communicated our views of the effects of lead on the heart to our late worthy colleague, Dr. Elisha Harris, now Chief Physician to the Marine Hospital, Staten Island. He obligingly consented to consider the matter and furnish us the result. The testimony of so intelligent and careful an observer in the following two cases, kindly contributed by him, is specially valued by us as corroborating opinions on the depressing influence of lead on the heart, in which, in the natural enthusiasm of special study, we feared we might be too sanguine. In slowness of the pulse, cardiac oppression, great despondency, and tendency to fainting, the first case resembles that just recorded.

Case 8.—*Prostration from Lead.—Heart Enfeebled.—Recovery.—Relapse.—Great Improvement.*—We copy from Dr. H.'s manuscript notes:—Mr. C., house painter, æt. 48, a man of sound constitution and good habits, began to suffer from lead arthralgia about five years ago. Two years since he applied for medical advice, and he was then suffering from very severe pains in the joints, which prevented his rest at night, and partially disabled him from labor. He also suffered much from headache, and had periods of great prostration, during which, syncope usually occurred with more or less frequency.

The pulse was about fifty, exceedingly feeble; and the cardiac sounds were faint, while the heart's impulse was very feeble.

The characteristic mark of lead poisoning, the purple discoloration of the gums, was broadly developed, and the flexors of the upper extremities had become enfeebled, though not paralyzed.

Investigating by exclusion, no other cause than the lead poisoning could be found to account for the patient's enfeebled condition. Treatment:

℞. Potass. Iodid. gr. viij.
Tinct. Gentian comp. ʒij.
Tinct. Nucis Vomicæ, gtt. vj.
M. To be taken four times a-day.

Under this treatment he rapidly improved, and after the first week, he rested perfectly at night, and suffered no more arthralgia. His heart regained its normal vigor and healthy impulse after about two months. He considered himself perfectly well at the time, and took no more medicine.

Continuing his employment as house-painter, his old difficulties returned during the last winter, and two weeks since he applied for advice again, when I found the heart nearly as feeble as at the time of my first examination, and I learned that he had for some time past suffered greatly from a sense of impending dissolution, which was most oppressive at night. His lead arthralgia had become more severe than ever previously. The heart beat more rapidly than before, and quite as feebly. He has been of the opinion that his life would suddenly terminate. His attacks of syncope have not been as frequent as formerly, but his sense of prostration was even more oppressive.

The treatment has been the same as previously. At the end of the first week he has been able to sleep soundly all night. His heart beats with a stronger impulse. He expresses himself as feeling a "new man."

Case 9.—*Lead Paralysis.—Weak Heart.—Recovery.*—M. M., aged 21, unmarried, of medium development, was kindly referred to me for examination, by Dr. H., Dec. 30, 1854. Three years since, she commenced working in a card manufactory in which she was obliged to use the carbonate of lead in the process of enameling or glazing. Eight months after, she was attacked with lead colic which lasted for four days, and she was finally relieved at the New York Dispensary, under the care of Dr. H., and by his advice she changed her employment. One year after, she returned to the card-making, at which she continued until four months later, when she was attacked with lead paralysis of the extensors of the right forearm or the "drop wrist," accompanied by general numbness; muscular wandering pains; lead streak of the gums; encrusted blackened teeth; loss of appetite;

palpitation; remarkably feeble impulse of the heart, and faintness under the least excitement or exertion.

Under the use of eight grains of the iodide of potassium in solution with a few drops of the tincture of nux vomica three times a-day;—with cessation from her employment—in the course of the next six months she almost entirely recovered; so that at the time of my examination, the paralysis was quite gone; the heart almost entirely recovered in its tone; and the patient felt relieved from the necessity of further treatment.

In the following case, still under the care of the writer, are several points of special interest. The paralysis of the muscles of both forearms was the most complete we have ever seen. Both the flexors and extensors were entirely powerless, so that the patient could not grasp or lift anything with the hands; but merely brought the arms together as if they had been amputated at the wrist. We shall not easily forget the imploring manner in which the patient, a stirring mother of six children, at her first visit held out her dangling, cold, palsied hands for relief. Yet the disease, for some obscure cause, was exceedingly local. Her face had nothing of the lead pallor, but was still blooming. The heart was the least affected of any in the cases related.

Case 10.—*Lead Palsy.—Drop Wrists.—Dyspepsia.—Amenorrhœa.—Heart slightly enfeebled.—Recovering.*—Mrs. J., boarding-house keeper, æt. 37, originally stout, and still retaining a ruddy English complexion, was admitted to the New York Dispensary under our care, Dec. 13th, 1855, with complete loss of motion in the muscles of both forearms.

Some time since, her husband had kept a porter-house, and then, and since, she had taken a glass of beer, drawn through lead pipes, two or three times a-week, when faint from over-exertion. Some of the customers were careful not to drink the first draught in the morning, but she was not very particular herself. Latterly, she had kept boarders in the upper part of a high house supplied with croton water through lead pipes. She had never before lost a day with sickness, except during her confinements with her children. Eight months previous the menses ceased, and two months after this event, she complained of pain and numbness in the ankles, with difficulty in walking. Four months ago, she began to be affected with loss of appetite, nausea, and occasional vomiting, which has continued ever since, and which has caused her the loss of thirty-five pounds in flesh. She never had lead colic. Five weeks previous to admission, palsy of her right hand and wrist

commenced, and one week later, the left hand yielded. She wept with despondency, and complained of being altogether in a deplorably helpless state, with the care of a large family, and unable even to feed herself.

Condition.—There were noted, hands drooping, powerless, and cold; slight lead streak of the gums of three lower teeth; pulse 96, feeble; no faintness on going moderately up stairs; heart's impulse slighly diminished, but not enough to be noticed except by special attention; nausea and vomiting; menses suppressed; troubled dreams and night-mare.

The case was so urgent that we determined to try all the usual remedies at once. She was ordered to take ten grains of the iodide of potassium in solution with five drops of the strong tincture of nux vomica, for weeks, three times a-day; to use once a-week a full laxative of powdered sulphur, rhubarb, and ginger; and, every four or five days, to take, on going to bed, a warm sulphur bath for twenty minutes, in the proportion of one ounce of the sulphuret of potassium to six gallons of water, soaking the arms and hands much longer than the rest of the body; elastic bands composed of old suspenders were attached above the elbow, and to the drooping hands for part of the day, so as to rest the stretched, palsied muscles; the flesh-brush was freely used, and lastly, through the kind offices of my friend Dr. Strong, of Brooklyn, she had the intelligent and careful application of electricity every second day.

It was in fact a combined attack outside, inside, and every side, and in no infinitesimal doses. The prompt good effects were surprising. In a few days the stomach grew quiet, and the appetite returned in full force; shortly after, the menses reappeared; and later still the distressing coldness ceased, and strength began gradually to return to the palsied hands, so that she could take her food, and use them quite freely. At the time of finishing our report, six weeks from the commencement of treatment, under the continued use of all the remedies mentioned, she is evidently rapidly recovering.

For convenience of reference, we have prepared the following brief table of the above cases, exhibiting at a glance in parallel columns, the lead and heart symptoms, and some other points of interest. Numbers 1 and 2, marked by an asterisk in the first column, had previous organic disease of the heart from rheumatism, and were simply aggravated by lead. All the rest were free from any affection of the heart until the lead poisoning. Numbers 8, and 9, were those kindly furnished by Dr. Harris; while the remaining eight were under our own observation.

A Table shewing the Effects of Lead on the Heart in Ten Cases of Partial Paralysis or General Muscular Debility.

NO.	SEX.	AGE.	CONDITION, CAUSES.	OTHER LEAD SYMPTOMS.	HEART SYMPTOMS.	TREATMENT.	RESULTS.
1 *	M.	34	WAFER-MAKER.—From lead in coloring matters; after prostration from intermittent.	Waxy jaundice; purple gums; brown encrusted teeth; slight incipient paralysis of limbs; great prostration, dyspepsia; constipation.	Signs of old rheumatic hypertrophy with mitral regurgitation and consequent enlarged liver; small weak pulse; feeble impulse; palpitation; faintness on exertion; fear of sudden death.	Taraxacum; bark; iodide of potassium; nux vomica.	Greatly improved.
2 *	M.	36	PEDDLER.—From drinking soda and Croton water from lead pipes; after some dissipation.	Lead colic; pale waxy skin; purple gums; brown encrusted teeth; general muscular debility; indigestion; nausea; constipation; severe headaches.	Signs of slight old rheumatic hypertrophy, with faint mitral regurgitation; faintness on exertion; cardiac distress; palpitation; morbid fear of death.	Purging with croton oil; anodynes; afterwards, iodide of potassium and nux vomica.	Rapidly improving.
3	M.	34	LABORER.—From working in a white lead factory.	Violet streak of gums; incipient paralysis of limbs; nausea; tender epigastrium; indigestion; constipation.	Sinking palpitation; soft tapping impulse; dyspnœa; faintness on going up stairs.	Counter irritation; iodide of potassium; nux vomica; belladonna.	Left convalescent.
4	M.	39	SHOEMAKER.—From Croton water through long lead pipes after intermittent.	Partial paralysis of the muscles of the forearm; lead streak of the gums; indigestion; constipation.	Faintness on going up stairs; sinking palpitation; feeble impulse; pulse 64, weak.	Iodide of potassium and tonics temporarily.	Left hastily.
5	M.	22	HOUSE-PAINTER.—After repeated prostration by lead colic.	Complete paralysis of both forearms and hands; lead streak of gums; dyspepsia; arthralgia; much emaciation.	Faintness on exertion; weak impulse; sinking palpitation.	Sulphur baths and galvanism at first with relief. In the relapse iodide of potassium and nux vomica temporarily.	Discontinued attendance.
6	M.	32	LABORER.—From working in a white lead factory; after severe bronchitis.	General muscular weakness; lead streak of gums; dyspepsia; severe headaches; wandering pains.	Weak velvety impulse; pulse 60, and soft.	For a short time with the iodide of potassium and tonics.	Left early.
7	M.	29	HOUSE-PAINTER.—After prostration by cholera.	Lead streak of the gums; general muscular weakness; nausea; dyspepsia.	Sinking palpitation; cardiac oppression; pulse 64, weak; alarming faintings at night; feeble impulse; fear of sudden death. Night-mare.	Iodide of potassium; nux vomica.	Recovered.
8	M.	48	HOUSE-PAINTER.—Enfeebled by long and severe arthralgia.	Purple gums; muscular debility, especially of the forearms; lead arthralgia.	Alarming syncope; fear of sudden death; feeble sounds and impulse; pulse 50.	Iodide of potassium; nux vomica; gentian.	Recovered.
9	F.	21	Employed glazing cards, with white lead; lead colic.	Paralysis of right forearm; lead streak of gums; encrusted, blackened teeth; wandering pains; general numbness.	Feeble impulse; sinking palpitation; faintness on exertion.	Iodide of potassium; nux vomica.	Recovered.
10	F.	37	BOARDING-HOUSEKEEPER.—From beer and Croton water through lead pipes.	Paralysis of both forearms and hands; lead streak of the gums; vomiting; dyspepsia; arthralgia. Lost 35 lbs.	Slightly enfeebled impulse; weak pulse; great despondency. Night-mare.	Sulphur baths and laxatives; iodide of potassium; nux vomica; electricity.	Rapidly recovering.

Very briefly, we may, in conclusion, notice a few of the points suggested, under appropriate heads.

Symptoms.—Commencing with the most frequent, and their intimate companions, we may rapidly enumerate, italicising the most important. In the ten cases, *violet or purple streak of the gums*, the most constant and delicate test of lead contamination, either in disease or apparent health—was found in all; its occasional associate, blackened, encrusted teeth, three times; *dyspepsia*, nine; its frequent concomitants, nausea and constipation, each three; *partial paralysis*, seven; and general muscular debility, three; * *pains* in the joints, muscles, or head, seven; emaciation moderate, and not of the skinny cadaverous kind sometimes seen, twice; and lastly, lead jaundice of the regular dirty, tawny hue, and characteristic of the free absorption of lead by the lungs or stomach, once.

The Heart symptoms, as subjects of our special study, invite more attention.

The *weakened impulse* of the heart, characteristic as we have stated of either lead paralysis, or debility, was present more or less, nine times out of the ten. Just as with nice shades of difference in the pulse, or sounds of the heart, it requires a little close attention and education of our senses to discriminate. A superficial or inexperienced observer might fail in its detection. We must seize a tranquil moment in the right position. The sight, hearing, and touch, must be delicately exercised. Variations in the visible movement, in rapidity, volume, sound, and strength, between morbidly slow or rapid *feeble tapping*, and the healthy *firm striking* of the heart must be carefully appreciated. Where lead colic prevails uncomplicated, with either paralysis or marked debility, the stimulus of pain seems generally to cause a *firm hard impulse.*

Faintness on Exertion, requires usually pointed questioning. The patient commonly complains of so many bad feelings, that he forgets this, unless made the object of his attention. We generally ask the easily understood question, if there is unusual faintness or op-

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* The following numbers represent the relative frequency of lead paralysis in different parts of the body, in a table of 102 cases, furnished by Tanquerel: general paralysis of upper extremities, 5; paralysis of shoulder, 7; do. of the arm, 1; arm, forearm, wrist, and fingers, 4; forearm, wrist, and fingers 14; wrist and fingers, 26; wrist, 10; fingers, 30; vocal muscles, (aphonia, 16; stammering, 15;) 31; intercostals, 2; dorsal, pectoral, and sterno-mastoid, 1; general paralysis of lower extremities, 1; paralysis of thigh, 5; of thigh, leg, feet, and toes, 2; foot and toes, 3; foot, 2; toes, 2.

pression on going up stairs. It was recorded in seven of the above ten cases.

Syncope or *actual fainting* found in two of our cases, has been aptly termed by Bouillaud, "momentary paralysis" of the heart.* From the frequency of sudden death in organic cardiac affections, the occurrence of a protracted fainting fit with distress at the heart, naturally excites much alarm. In one case above, it occurred during sleep.

Palpitation so far as the patient is concerned, may be defined to be a painful sense of the action of the heart. And this may be from excited sensibility, mechanical enlargement, overaction, or even want of action. When the heart is depressed, or, so to speak, slightly paralyzed by lead, the sensation of faltering or fluttering naturally excites the attention of the sufferer, and if intelligent, he may possibly describe his feelings by the term "sinking palpitation." It was noted eight times out of ten. Cardiac oppression and slight dyspnœa, are generally associated with palpitation, though often not specially mentioned.

Night-Mare and Troubled Dreams, depending probably on the same causes during sleep, occurred twice.

Great Despondency and Fear of Sudden Death, noticed in three of the above cases, are natural characteristics of the more oppressive forms of heart disease. Contrasted with the buoyant hope of consumptives, the depression of cardiac affections is peculiar. When long existing, the sufferers are apt to become prematurely careworn, or gray.

The Pulse, as Tanquerel has observed, in lead paralysis, is almost uniformly soft, compressible, and slow. It usually ranges from 50 to 65, showing that the heart which propels it is feeble. In five instances above, the pulse is mentioned as "weak." On the contrary, the stimulus, of pain, generally renders the pulse in simple lead colic, like the heart's impulse, both hard and full.

Causes.—This term is of course used in a liberal sense, referring to any accessory circumstances or agencies. Anything that prostrates the system, seems to act as a predisposing cause. An intelligent superintendent of white-lead works in Brooklyn, informed the writer, that a few days of hard drinking with any of the workmen, were sure to be followed by colic or paralysis. It is doubtless thus, that successive shocks of lead colic are often finally succeeded by palsy. In two of the cases given, there was just previously intermittent fever; in

* *Maladies du Cœur.*

one each bronchitis, cholera, protracted lead colic, arthralgia, or intemperance.

As conditions acting as exciting causes, in our list seven were workers in some form of lead, and three were affected from drinking Croton water, beer, or soda-water, through lead pipes.

We have before alluded, in passing, to many known or unsuspected methods of exposure to lead. In illustration, we may simply add the following list from the great work of Tanquerel des Planches:* "Of 101 subjects of lead paralysis, there were manufacturers of white lead, 31; do. of minium, 6; painters of buildings, 22; do. of carriages, 4; do. ornamental, 5; grinders of colors, 6; manufacturers of German cards, 1; potters, 5; refiners, 3; plumbers, 3; type founders, 4; printers, 3; lapidaries, 3; cutters of crystals, 1; manufacturers of acetate of lead, 2; do. sulphate of lead, 1; do. chromate of lead, 1."

Pathology.—Disease is commonly but the process of dying, arrested in recovery or consummated in death. In the celebrated treatise of Bichat, there are three modes of dissolution enumerated; death by the brain, lungs, or heart; or, by coma, asphixia, or asthenia.† Lead may reach the heart through various channels. Some have supposed lead colic to be simply neuralgia of the great sympathetic nerves. If so, why may not the opposite or anasthetic condition prevail in paralysis, affecting both nutrition and the circulation by producing both constipation and indigestion as well as weakening of the heart? We may, indeed, account for the heart symptoms in two ways: either by supposing it involved in the general torpor of the ganglionic or spinal system; or, as Christison believes, by assuming that lead has a specific effect on the heart itself, tending to death by asthenia. Facts respecting other poisons, and even lead itself, strongly favor the latter theory.

Sir Benjamin Brodie, in some experiments upon animals, related in the Philosophical Transactions, states that on injecting into the body either the oil of tobacco or the upas antiar, there were great faintness and sinking of the pulse, and on examination immediately after death, he found the heart distended with florid blood, paralyzed, and insensible to galvanism though the rest of the muscular system could be stimulated by it to contraction. The woorara poison of the South American Indians is said to produce like effects. Though primarily acting as an irritant to the alimentary canal, arsenic is also classed by authorities, among the agents that kill by paralysing the heart. A friend of ours in Brooklyn, fond of researches in natural science, happened,

* *Maladies de Plomb.* † *Sur la Vie et sur la Mort.*

under the orders of his physician, to be taking Fowler's Arsenical Solution. At length he felt his heart beating very faintly, and became greatly prostrated. On repeatedly examining his own pulse, he found it soft and weak, and he could only make fifty beats in a minute. These are just the symptoms we have ascribed to lead in paralysis. We know, too, by daily practice, that digitalis acts mainly on the heart and circulation.

We are not left, however, to mere conjecture from analogy. In experiments detailed in the *Edinburgh Medical and Surgical Journal*, Mr. Blake found that a dram of the acetate of lead taken into the stomach of a dog, suddenly arrested the heart's action, and that the small quantity of three grains injected into the jugular vein, diminished the force of the heart.

Foidèrè,* in the post-mortem examination of a patient with lead disease, describes the heart as presenting a shrunken or "withered" appearance.

Again, setting aside the dispute about "natural lead," the chemical researches of Orfila, Tiedeman, Gmelin, Devergie, and Guibort, have detected in subjects who have died of lead disease, an unusual amount of the poisonous metal in the brain muscles, thoracic and abdominal viscera, and especially in the blood.

Now, as every-day practice proves, even when medicinally applied to the skin, lead is a sedative. Let its poison course along the lining membrane of the arteries and veins, and thus mingling with the blood, its vital stimulant, bathe constantly the central organ of circulation, and we can easily see why the heart should especially feel its paralyzing influence.

Treatment.—The chief remedies to counteract the depressing effects of lead may be divided into two classes. The first may be termed *disinfectants*, such as the iodide of potassium, and the various preparations of sulphur; and these act by eliminating the poison from the system, and thus remove causes.

The second class—if we may coin a word easily understood—may be designated *Anti-paralytics*, such as strychnia and electricity. These restore tone to the injured organs, and thus powerfully relieve effects.

Iodide of Potassium.—The "*disinfectant*" properties of this powerful antidote to the slow poison of lead and mercury have been mainly brought to light through the recent researches of M. Melsens of Paris.

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* *Mèdicine Lègale.*

In an article inserted in this Journal some time since, we had occasion to publish some illustrative cases with a brief review of the original memoir of this indefatigable observer.* M. Melsens, by well-recognized facts, established two propositions: first, that *lead and mercury combine with the tissues of the body, and remain there for years;* and second, *that the Iodide of Potassium acts as a powerful solvent to the compounds of both lead and mercury thus fixed in the system, disengaging them and draining them off, so to speak, by the urine through the kidneys.* And he proved these principles by an array of chemical and clinical experiments. He took a large quantity of the iodide of potassium himself, and discovered it quickly and almost exclusively in his urine; he gave it to a patient with mercurial palsy, and, on analyzing the urine, found the iodide of mercury; he paralyzed and emaciated several dogs till nearly dead, by feeding them with the sulphate or carbonate of lead, and then restored them rapidly to health and flesh with the iodide of potassium; and finally he cured or greatly relieved, with the same remedy, three patients paralyzed by lead, and five by mercury. Experiments by others have since detected the iodide of lead in the urine of patients under this treatment for lead paralysis. Though M. Melsens gave the iodide of potassium without inconvenience in large doses for weeks and months, commencing with half a dram and running up to a dram and a-half daily,—yet with this somewhat expensive article among the poor, we have succeeded very well in the more moderate dose of ten grains three times a-day for a few weeks or months. It is more cleanly and convenient, and less expensive, than sulphur baths. And if reduced to a single remedy we believe none so efficacious.

Sulphur Baths.—Sulphur in every form is an antidote to lead. Sulphuric acid internally, the sulphates of magnesia and soda as purgatives, and sulphur as a laxative, have all been used. Natural sulphur springs have long been resorted to for bathing purposes, with great benefit in lead affections. Our own of Virginia are excellent. Fortunately for the laboring classes, we have an admirable substitute highly recommended by the Tanquerel, Dr. Alderson, and the best authorities. From four to six ounces of the sulphuret of potassium—an ordinary cheap article of commerce—may be dissolved in sufficient tepid water to make a comfortable bath for an adult. The patient may remain in this from twenty minutes to an hour, not using it so frequently as to produce too much debility, and sustaining the muscular strength in the

* *Cases testing the Iodide of Potassium as an Antidote*, etc., September, 1853.

meantime by strychnia, electricity or other agents. In many cases a brown coating of the sulphuret of lead is formed on the skin, so that the poisonous metal is literally *soaked* out of the system. These baths in moderation are generally very grateful to the patient.

Antiparalytics.—In emergency we have adopted this term, to designate a subdivision of the class of tonics, noted for their special power in relieving paralysis; just as in medical language we have already accepted the terms antispasmodics or antiperiodics from their power in arresting certain other symptoms of disease.

Nux Vomica or Strychnia.—The antiparalytic power of the vomica nut and its active principle strychnia, is too generally recognized to need much comment. Both, in large doses, are known to be powerful poisons, and both, in minute safe proportions, are valuable tonics. Linnæus long ago suggested nux vomica in dyspepsia. Alone or combined with small quantities of rhubarb or aloes, the extract or tincture of nux vomica, are valuable remedies in constipation. Both these symptoms prevail in lead disease. While the extract and tincture have appeared to us most useful in indigestion and constipation, the alkaloid strychnia is the most uniform in strength, and most reliable in the restoration of parts paralyzed. Yet all the preparations of nux vomica possess this power. On the moderate exhibition of strychnia, as we know, prickings and spasmodic twitchings, or slight convulsive movements of the limbs, occur, producing a faint imitation of the tetanus which some have termed *strychnism.*

These stimulating and vivifying effects seem at length to centre on the weak, or paralyzed muscles, and often happily end in cure.

Strychnia, it will be recollected, should be commenced cautiously, in doses of about one-twentieth of a grain in pill, or, what is more convenient, in solution of a grain to the ounce, of one part acetic acid, and three of water; and gradually increased to a quarter, or even half a grain three times a-day. Tanquerel, commenced with the sixth and ran up to even two grains, in the twenty-four hours, and with great success. Where preceded or combined with *disinfectant* treatment, we have never found more than half the first-mentioned proportions necessary. Sometimes it has been applied externally as an ointment, or to a blistered surface. In dispensary practice among a class of patients, where mistakes are more likely to occur, we have invariably preferred the milder and safer, though perhaps slower, tincture of nux vomica. Weber, found that on touching the heart of a dead frog with a solution of strychnia, he produced rigid *tonic contraction.* We

have long preferred it as a tonic to any other remedy in most forms of debility of the heart, and especially in that from lead.

Electricity or Galvanism has been used with more or less success as a remedy for paralysis for a century. Tanquerel, cured eight patients with lead palsy, who persevered with it, out of fifteen. Dr. Golding Bird, as stated in his valuable paper, in the *Guy's Hospital Reports*, was also very successful with this agent in paralytic cases. It is particularly suited to those that are slight and limited.

A gently stimulating current, not too violent, is commonly passed from the point of origin, to the termination of the particular nerves affected.

We may further remark, that we think no plan of treatment perfect, that does not combine, either together or in succession, both a disinfectant and an antiparalytic agent. The most convenient and efficacious we believe to be the iodide of potassium, and nux vomica, or strychnia. To these may be added good food, fresh air, and the flesh-brush. Sulphur baths and electricity are excellent auxiliaries if needed. To prevent a relapse, and, in fact, to prevent the disease altogether, nothing is so efficacious as that which a good house-wife once ranked next to the highest Christian virtue—*perfect cleanliness.* Free ventilation, frequent washing of the hands, face, and mouth, cleansing even the nails; wearing a compact linen suit washed twice a week, and changed on leaving work; a light cap to protect the hair; and an early laxative in slight constipation,—have protected the most exposed from an hour's suffering in many years.

In closing we may remark, that although some authors have, in passing, alluded to palpitation and slow pulse, as present in isolated cases of lead paralysis, yet, in yielding to the evidence of our senses, and believing feeble impulse of the heart, and faintness on exertion, to be prevailing characteristics, we are forced beyond the beaten track. We urge not our opinions on others, but only ask fair consideration of our cases. One well-established fact is worth a thousand visionary hypotheses. The vast domains of medicine are filled with the ruins of magnificent temples reared by master minds, of which time has swept away beautiful columns and arches of theories, while their facts, as solid foundations, forever remain.

The evidence gathered in this discussion tends, as we believe, more or less, to establish the following

CONCLUSIONS.

1.—That allowing a due excess of force to carry on the embarrassed

circulation in organic affections of the heart, it appears that certain symptoms in slow poisoning from lead, as well as in cardiac disease proper, typhus fever, and apparent death from catalepsy or other causes, all tend to prove that, as a rule, the *impulse* may be termed the *pulse of the heart;* and that, its more careful study than heretofore, may aid us in the general diagnosis and treatment of disease.

2.—That the symptoms of weakening of the heart in lead poisoning, are confined to cases of *partial paralysis, or general muscular debility*, accompanied usually by the purple streak of the gums, indigestion, constipation, pains in the head, muscles, or joints, and sometimes by lead jaundice; and that commencing and emphasizing with the most frequent, these heart symptoms from lead are:—*weakened or soft tapping impulse; faintness on unusual exertion;* feeble and generally slow pulse; palpitation; cardiac uneasiness; and to these are occasionally added, great despondency or morbid fear of death; suspicions of organic disease of the heart, fainting fits, night-mare, or troubled dreams.

3.— That these depressing heart symptoms are absent in the earlier and more acute stageof lead poisoning, known as "*lead colic*," when, on the contrary, the stimulus of pain generally renders the impulse of the heart and the pulse at the wrist more firm than natural.

4.—That skill in the detection of minute variations in the impulse of the heart, naturally requires a little careful attention and practice.

5.—That these debilitating effects of lead most commonly occur in hearts previously sound, but they sometimes complicate existing organic cardiac disease from rheumatism or other causes.

6.—That the agencies or causes of lead poisoning are very numerous, and often obscure; and that slighter cases supposed to be ordinary dyspepsia, constipation, debility, or bilious colic, are frequently undetected.

7.—That the above tests of the immediate influence of lead on the heart in disease, are further corroborated by experiments upon animals; showing that, more mildly and slowly, *lead*, like digitalis, oil of tobacco, upas antiar, the woorara, and some other poisons, tends specially to paralyze the central organ of the circulation, and, like these, ultimately to produce what Bichat termed "*Death by the heart.*"

8.—That the remedies for the paralyzing influence of lead may be divided into two classes:—*Disinfectants*, such as the iodide of potassium, and preparations of sulphur; and *Antiparalytics*, such as strychnia and electricity; that the best treatment combines these two elements; and that, on the whole, the most convenient and efficacious

are free doses of the iodide of potassium, and minute proportions of strychnia or nux vomica.

9.—That the above conclusions are founded mainly on the evidence of ten cases, principally among the badly-nourished and improvident poor finally resorting to public institutions; and they may possibly be somewhat modified in future by more extended observation in private and more favorable practice.

ART. VII.—*Abstracts of the Proceedings, Papers, etc., of Medical Societies of New York.*

NEW YORK ACADEMY OF MEDICINE.—DR. WILLARD PARKER, *President.* THE NEW YORK ACADEMY OF MEDICINE, the largest and most influential medical society of this city, is now in the tenth year of its existence, having been organized January 6, 1847. At the period of its formation, the profession of this city was in a distracted state, having no common ground of meeting, and no representative organization. There was little harmony existing in the profession at large, and no unity of action, either in defense of the rights, privileges, and honor of medicine, or its cultivation as a science. At that period, also, the visionary theories of medical adventurers had spread widely, and were exerting a most pernicious influence upon this community. Scientific medicine was gradually losing that popular favor which it had always enjoyed, and to which its services in the cause of humanity justly entitled it. A sense of common danger drew the profession almost spontaneously together, and with great unanimity the organization of the Academy of Medicine was effected, which, it was designed, should "represent, if not embrace, the great mass of regular practitioners residing here."

The object sought to be accomplished by this union of the profession is thus stated in the first draft of the constitution:—

First.—The cultivation and advancement of the science, by united exertions, for mutual improvement, and contributions to medical literature.

Second.—The promotion of the character, interests, and honor of the fraternity, by maintaining the union and harmony of the regular profession of the city, and its vicinity, and aiming to elevate the standard of medical education.

Third.—The separation of regular from irregular practitioners.

Fourth.—The association of the profession proper for purposes of mutual recognition and fellowship.

The designs of the founders of the Academy, as thus expressed, were of the most laudable character, and met with the hearty approbation of every scientific medical man. They aimed to give character to his profession, to facilitate his inquiries into medical science, and to render his professional associations agreeable and profitable. The State Medical Society recognized it as an organization destined to be of great service in the advancement of medical science, and recommended the formation of similar societies throughout the State.

In 1851 the Academy was incorporated by the State Legislature, and thereafter assumed a more commanding position. The most considerable change, however, was effected in its internal arrangement, and that consisted of a division of its members into sections, a plan which went into operation with the commencement of last year. These sections embrace the six grand departments of medicine, as follows:— I.—*Anatomy and Physiology.* II.—*Surgery and Surgical Pathology.* III.—*Theory and Practice, and Medical Pathology.* IV.—*Materia Medica and Botany.* V.—*Obstetrics, and Diseases of Women and Children.* VI.—*Chemistry and Pharmacy.* VII.—*Public Health and Legal Medicine.* These sections select their own officers, and adopt their own by-laws; they are required to meet at least once a month, and no change of members from one section to another is allowed without the consent of the Academy The following general rules govern the sections:—

1.—All papers and subjects referred by the Academy to the respective sections, shall be considered and discussed by these sections, and a report thereon made to the Academy.

2.—Each section shall recommend a subject for discussion before the Academy at least once every six months, and appoint a member to open the discussion.

3.—All original paper shall be first read before the Academy.

4.—Each section shall appoint annually two or more of its members to read an original paper before the Academy.

5.—A brief abstract of the cases verbally reported in the sections may be made to the Academy.*

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* The division of the Academy into sections was principally due to Dr. J. P. Batchelder, and it was his design that each section should be farther divided into sub-sections. The following are his views:—"It was suggested in the committee having this matter in charge, that the several sections should be divided, according to their own views, into sub-sections; that in making this division, the members composing each section would arrange themselves in the several sub-sections, according to the views they might entertain of their own tastes, talents, or tact; and that when this arrangement had been completed,

This division of the Academy into sections is destined to operate in the most salutary manner. The individual section becomes an active working society, where each member shares the advantage of discussion, and the labor and responsibility of its routine of business.

The Academy has now nearly passed its first decade, and a glance at its past history and present position affords the most cheering evidence of a prosperous future. It has triumphed over the obstacles which always retard the progress and embarrass the working of such organizations in the first years of their existence; it has firmly united all ranks of the profession in their efforts to raise the standard of professional respectability in this community, and now stands the acknowledged representative association of the regular profession of New York City. It now numbers upwards of two hundred and fifty resident members, and at no period of its history has it had as many applications for membership as the present. It is entitled to representation in the State Medical Society; and sends to the American Medical Association seventeen delegates.

Such is, briefly, the past history and present position of the New York Academy of Medicine. The influence which it is hereafter to exert upon the profession in this city, will, we believe, be of the most powerful and salutary character. Embracing a large portion of the regularly educated practitioners, and having a stringent, yet liberal,

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distinct topics would be assigned by the sections to the sub-sections, and by these, perhaps, to particular individuals for their special or personal investigation; or that each member would, if he chose, select and handle such subjects as he would best like to investigate, be most interested in, or most likely to distinguish himself; that the discussions which would come up in the sub-sections and the previous individual examinations would not only familiarize members with subjects thus examined and discussed, but initiate them into the art and habit of close and rigid investigation; and furthermore, that matters more difficult and abstruse would give rise to written disquisitions and essays, which might go to make up a volume of transactions. In this way each fellow will increase his own stock of knowledge, and shed light on the pathway of his associates, and the Academy be likely to get papers for publication. From the sub-sections these discussions will be carried into the different medical clubs and associations to which most of us belong, where they will be re-discussed, and so benefit other assemblages, and probably be the means of inducing many enterprising and talented members of the profession to enter the Academy. The subjects, having passed through these preliminary steps, will be brought before the whole section, in which they will or may be again examined and discussed, and, last of all, find their way into the Academy, where they will undergo their final examination and discussion, which will elicit remarks embodying the experience and knowledge of the whole assemblage, and give every member an opportunity of learning all that is known in relation to the matters thus brought before this body, and with much less trouble and labor than the same amount of information could have been elaborated and acquired in any other way. To this end, it is only necessary for every one to work, strictly speaking, for his own benefit."

code of ethics, which it has, heretofore, jealously guarded and enforced, it is an ethical body of no mean importance. It has already so impressed upon its members the character of honesty, regularity in education and practice, and scientific attainments, that the younger medical men, and recent residents, are seeking early membership to shield them, both in professional and public estimation, from the suspicion of irregularity. It is the high court of appeal to which the profession is beginning to refer individual differences, which involve a question of professional etiquette. As an ethical body, then, carefully protecting individual rights, equitably deciding all questions of ethics, and jealously maintaining the honor of the profession, the influence of the Academy will be immeasureably beneficial.

As a scientific body, the Academy is destined to take rank among the first institutions devoted to similar purposes. That it has contributed but little as yet to medical literature, is no valid objection to this assertion. Like all associations aiming to exercise over the profession an ethical control, and, at the same time, cultivate the study of all departments of medicine, it has had, necessarily, to pass through periods which severely tested its strength. At first its authority was not recognized, then it was disputed, but, finally, it is admitted. During this time its sessions were naturally much more devoted to the discussion of the rights, duties, and powers of the Academy, than scientific subjects. Too little attention was given to perfecting its internal arrangements, so as to make it efficient as a scientific body. But it has safely passed through these trying periods in its history, and, having attained its majority, it now enters upon a more prosperous career. By the recent division into sections, its organization for scientific purposes is rendered perfect, and the charge that it contributes nothing to the advancement of medical science, will hereafter have no foundation.

The Academy of Medicine is therefore destined, we believe, to be one of the most important medical associations in this country, both in "the cultivation and advancement of the science of medicine," in "the promotion of the character and honor of the profession," and in "the elevation of the standard of medical education." Located in this great metropolis, whose influence and power in every department of business is felt to the limits of our country, firmly uniting the energies of the great body of the profession of the city for the accomplishment of its noble objects; its organization so far perfected as to make it act harmoniously and efficiently as an ethical and scientific body, the future importance of this Academy can scarcely be over-estimated.

Nor is the day distant when it will exert upon our municipal government a most salutary influence. Its very organization, embracing the united efforts of the medical profession in the investigation of the causes of disease and their remedy, entitles it to become the head of the sanitary department of the city; and this fact will become more and more evident, until its authority is recognized, and such powers and privileges are granted.

We make these remarks as a suitable introduction to an abstract of the proceedings of the sections. The Section on Surgery and Surgical Pathology meets twice monthly, and after disposing of such matter as is referred to it by the Academy, receives from individual members verbal communications. The following is an abstract of the cases thus reported, and the practical remarks which they elicited:—

SURGERY AND SURGICAL PATHOLOGY.

Regular Meeting, March 16, 1855.—Dr. Detmold, *Chairman.*

(*Reported by* Dr. Stephen Smith, *Secretary.*)

Ligature of the Femoral Artery in its Middle Third.—Dr. Detmold related the particulars of a case in which he had recently ligated the femoral artery in its middle third, for a circumscribed false aneurism of the anterior tibial artery. The patient received a stab in the leg from a pair of scissors, which was followed by a jet of arterial blood; the wound healed, but an aneurismal tumor soon after appeared, for which ligature of the femoral artery was practiced. The physician in attendance requested ligature of the popliteal artery, and for this reason the ligature was applied to the femoral in its middle portion, just beneath the external border of the sartorius muscle.

Exsection of the Superior Maxilla for Osteo-Sarcoma.—Previous Ligature of the Common Carotid Artery, with slight wound of the Internal Jugular Vein.—Dr. Detmold stated that he was called the day before to see a man whom the attending physician supposed to be suffering from a syphilitic affection of the jaw, causing caries of the bone, and involving the necessity of removing a sequestrum. A large tumor was found, involving the whole right superior maxilla, having the unquestionable characteristics of malignant disease. The patient was delirious, emaciated, with commencing gangrene of the mouth, and, with the exception of a good pulse and appetite, was evidently rapidly sinking. The only assistance that could be given was extirpation of the diseased growth, and this he proceeded to accomplish. Fearing there might be excessive hæmorrhage, owing to the infiltrated condition

of the tumor, it was deemed advisable to commence the operation by applying a ligature to the common carotid. This preliminary step was attended with considerable embarrassment, owing to a hiccup which attacked the patient, the small incision made, and the slight degree of pulsation discoverable in the artery. In the progress of the operation there was a jet of venous blood, which recurred on raising the artery from its bed by the ligature, but it immediately ceased on allowing this vessel to return to its proper position, and the application of slight pressure. The hæmorrhage was probably from the internal jugular vein, which must have been wounded in passing the needle. No trouble followed. He now proceeded with the main operation by making an incision from the lachrymal sac down to the lip, and along the infra-orbital margin, and dissecting of the flap, separated the bone with Liston's forceps. There was fearful hæmorrhage in this part of the operation. An incision was then made on the outer aspect of the tumor, from the external angle of the eye downward and outward, over the malar bone, and the bone divided with forceps. The tumor was then dissected from its remaining attachments and removed, and the actual cautery thoroughly applied. No ligatures were required. The patient bore the operation well, pulse continued good, and he became more rational.

In reflecting upon this case, Dr. D. is disposed to consider the operation improper, as the disease had evidently involved the ethmoid and sphenoid bones. Suppuration was very free, and the character of the delirium indicated implication of the brain. The chances of the patient, therefore, are not increased by the operation.

Exsection of Superior Maxilla and Malar Bone for Malignant Disease.—Carotid not Ligated.—No Hæmorrhage.—Dr. Detmold related a second case which occurred to him two years ago, where he removed the entire upper jaw and malar bone for malignant disease. He did not tie the carotid as a preliminary step, and there was no hæmorrhage. The patient recovered very favorably from the operation, but in a short time another tumor sprung from the sphenoid bone. A surgeon to whom he applied, tied the carotid, but without arresting the disease. He again applied to Dr. D. to have the tumor removed, who reluctantly consented to operate, as the patient wished to return to Germany, his native country, to die. The operation was performed without difficulty, and the patient lived to reach home in a very comfortable state, but died soon after.

Dr. Miner assisted in the ligature of the femoral artery recently, where on tightening the ligature venous blood welled up from the

bottom of the wound; it was controlled by slight pressure, and the case progressed favorably. Dr. Detmold thought there was not much danger in these slight wounds, unless air entered the vein. He has tied the carotid eight or nine times, and once in a child six months old, but never met so difficult a case as this, owing to the hiccup and feeble pulsation in the artery.

Dr. Krackowitzer suggested that the hiccup might have been due to injury of the par vagum.

Dr. Detmold replied, that the hiccup commenced before he had exposed the vessels.

Dr. Batchelder has frequently found great difficulty in attempting to pass the needle from without inwards, owing to the spasms excited by irritation of this nerve, and in these cases is accustomed to reverse the rule, and cautiously pass the needle from within outwards.

Dr. Detmold remarked, that he never before tied the carotid previously to operating on the face, but in the case related, did not think it possible to have removed the tumor, without great danger from hæmorrhage, if the artery had not been tied—tying one carotid will not ordinarily prevent hæmorrhage, as the collateral circulation is so free, and he had seen jets from both cut extremities of the coronary artery in such cases.

Employment of Adhesive Plaster as a Counter Extending Band in Fracture of the Femur—Dr. Miner had recently under treatment in the Brooklyn Hospital, a German, having a sallow look, and cachectic appearance, who was admitted for a fracture of the thigh. He was treated as usual with a long splint, adhesive strip at the foot, and the ordinary perineal band. The case not being carefully watched, severe ulceration took place in the perineum. To continue treatment, and not add to the existing trouble, wide strips of adhesive plaster were cut, and passed down on the internal and external aspect of the thigh, and the ends were brought over the upper extremity of the splint, and secured. The patient made no further complaint, the ulcerations readily healed, and the result was entirely satisfactory.

Dr. Detmold mentioned the case of an infant six weeks old, which had fracture of the femur in its upper portion; great difficulty was experienced in keeping the fragments in apposition, owing to the elevation of the upper portion, but by applying an apparatus, so as to elevate the lower fragment and maintain it in contact with the upper, the case did well. He believes that shortening of the femur always occurs, and that but one inch of shortening in an average of twenty

cases is a good result. He exhibited a cast of the foot and leg of a child four years old, which, on recovering from a fit of sickness, at the age of four months, attempting to walk, was noticed to have a deformity of its ankle. On examination, an ununited fracture of the bone of the leg was found. An attempt to refracture it failed. By sub-cutaneous incision he divided the parts above the fragments, and with pulleys reduced them. It was found impossible, however, to retain them in apposition by ordinary dressings, and plaster of Paris was resorted to; the result is not known; if union has not taken place, he purposes using the perforator. Dr. Stevens had a similar case fifteen years ago, in which he resected the ends of the bone, but finally had to amputate.

Luxation of the head of the Radius in an Infant, during the operation of turning.—Dr. Krackowitzer related a case of luxation of the head of the radius, in an infant seven years old. The accident was supposed to have occurred during the operation of turning. The head of the bone was displaced forward, and the hand was lying in a prone position. The luxation was very distinct; the arm was ecchymosed after birth.

Dr. Batchelder remarked, that luxations of the head of the radius were not very infrequent in older children, the displacement being produced by the nurse lifting the child by the hand, as when in leading it the child falls, and the whole support of the body comes upon the hand. He has seen a number of such instances. The reduction is often difficult, generally from too much extension being made. He is accustomed to reduce these dislocations by simple manipulation, without making traction. The following is his method of operating:—Grasping the patient's hand upon its ulnar aspect in one hand, the thumb being applied to the palm, and the fingers to the dorsum, he seizes the elbow with the other on its inner side, the thumb being firmly applied to the head of the radius. The hand is now at first carried strongly inward, while firm pressure is made upon the luxated head of the radius, the elbow being also held firmly in the grasp of the upper hand; the arm of the patient is then flexed from this position suddenly and forcibly, the hand being carried strongly to the outer aspect of the humerus. By this movement the luxated head of the radius is first raised from its false position, and then made to descend to its proper position.

In a Case of Congenital Inguinal Hernia, where the testicle has not descended, would it be proper to apply a truss to effect a cure of the Hernia?—Dr. Holcomb stated, that a child six weeks old was

brought to him, having an inguinal hernia upon the right side, but, on examination, it was found that the testicle of this side had not yet descended. He inquired as to the propriety of applying a truss.

Dr. Detmold advised to let it alone, as there was no danger from the hernia, and the application of the truss might by curing the hernia prevent the descent of the testicle. The testicle descends in these cases at variable periods; he could recall several cases where the children are seven or eight years old, and still the testicles have not descended. They are often seized with pain, and brought home from school suffering severely, from the injuries which the partially descended testicles receive. He has seen these cases treated for hip-disease. He has known a case where an adult suffered from suppuration of both testicles in the canal. As it is important, therefore, that the testicles descend, and the application of a truss would materially interfere with that act, he would not interfere.

Dr. Brown alluded to the treatment of hernia in infants, with a skein of thread. It is applied by passing the skein of proper size, around the hips, drawing one end through the loop in the other, and adjusting the knot so formed over the rupture; pass the free end between the thighs, and fasten it to the part crossing the back.

Strangulated Femoral Hernia in a Female aged 87 years.—Relieved by powerful Enemata.—Dr. Miner related the case of a woman 87 years old, suffering from a strangulated femoral hernia. The hernia turns had existed for several years; the week previously she had considerable pain in it, with symptoms of strangulation; but after attempts at reduction, she got better. The bowels were moved with relief, and the physician in attendance began treating her for a bronchitis. When called to see her on a return of the symptoms of strangulation, she had stercoracious vomiting, but no pain or soreness of the tumor; a full pulse, and great irritability. Ice was applied to the tumor and the body lifted up, and attempts made in the inverted position to reduce it, and finally opium was given in large doses. On the following morning there was no relief, nor was there prostration. Active cathartics and enemata were ordered; chloroform and tart. emetic were not used on account of the great age of the patient. On the following morning, symptoms were more aggravated; prognosis most unfavorable; an operation, however, was not advised, and as the enemata had not been well given, they were ordered to be repeated. At 4 P.M., the council met, and found the bowels had been freely moved, with entire relief to the symptoms. Had the patient been young, would an early operation have been proper?

Dr. Detmold would have operated without fail. He does not think the operation so dangerous in old people.

Dr. Miner would have operated on a young person under these circumstances, without fail. He was disposed to regard the symptoms in this case as rather due to impaction, than strangulation; but the operation would have been no less difficult.

Dr. Batchelder thought the absence of pain modified the question of operation; there was less need of it; he doubted if the obstruction existed in the tumor; to learn the exact point of the obstruction, he should resort to the stethoscope; this defines the point where the peristaltic action ceases.

PATHOLOGICAL SOCIETY.

Regular Meeting, January 23.—Dr. Robert Watts, Jr., *President.*

(*Reported by* Dr. E. Lee Jones, *Secretary.*)

Puerperal Convulsions.—Dr. T. C. Finnell presented the uterus, stomach, liver, and one kidney, obtained from a young woman, 23 years of age, unmarried, who died this morning of puerperal convulsions, three months and a half advanced in pregnancy. She had been in a state of great despondency at the absence of her lover. Last evening, she retired, complaining of pain in back and abdomen; in the course of the night she was seized with convulsions, which continued until seven o'clock this morning, when she died. Between the interval of the recurrence of the convulsions she was in a comatose condition. The autopsy revealed the kidneys, congested; the liver, covered with spots resembling purpura hæmorragica as seen on the surface of the body; the mucous membrane of the stomach was likewise studded with similar spots. There was a suspicion of poison having been taken, but no evidence.

Cirrhosis of Liver.—Dr. Finnell also presented a specimen of cirrhosis of the liver, occurring in a woman 22 years old, admitted into St. Vincent's Hospital, on the twelfth of this month, having a chronic ulcer of the leg. The second day after admission she complained of a sensation of faintness, and was, in consequence, unable to leave the bed. In a few hours the skin became jaundiced, and on the following morning the presence of abdominal effusion was evinced by distinct fluctuation. She had no pain.

January 14.—Commenced vomiting; pulse 85; mind clear; skin cool. She expressed a desire to return home, if her sickness was likely to prove serious. In the evening she vomited a large quantity of blood; shortly after, she died.

Post mortem examination revealed the peritoneal cavity containing three quarts of serum. In the stomach was found a quantity of coagulated blood. On carefully washing the organ, no morbid appearance was observed. The liver was extensively cirrhosed, being diminished to one-half its natural size, nodulated, and firm in texture. The venæ portæ were filled with fibrinous coagula. The hepatic, cystic, and common ducts were much contracted.

Stomach of a Child which had swallowed forty grains of Nitrate of Silver.—Dr. Finnell then presented the stomach of a child, four years of age, who was poisoned by forty grains of the nitrate of silver, and which occurred in the practice of Dr. Rufus Belden. The following history was given:

Catherine Gould, aged 4 years, swallowed, on the 1st day of July, 1855, two scruples of nitrate of silver. For the first five or six days no unpleasant symptoms were exhibited by the child, or perceived by its parents, the little one continuing to run about as usual, and amusing herself with her wonted plays and amusements. On or about the sixth day it was attacked with violent mucous diarrhœa, which continued for nearly two months, attended with extreme emaciation and impaired appetite. After the usual remedies had been given for some six weeks, ordered the following mixture:

℞ Bals. copaiba, ℥ss.
Muc. G. acacia, ℥iijss.
M.

and administered in teaspoonful doses every four hours. Twenty-four hours after using it, the lips, gums, and teeth became encrusted with the caustic, on the mucous membrane of mouth and fauces. The action of the nitrate of silver was evident, the sputa appeared as if nitrate of silver had been dissolved in them; continued the use of the balsam, etc. On the ninth day after commencing the balsam, the diarrhœa became less, the action of the caustic in the mouth, on the lips and teeth, disappeared, and in about two weeks all unpleasant symptoms had subsided, the child improved in flesh, and became apparently well, and continued so until the beginning of last December, (five months after swallowing the poison,) when it showed symptoms of typhoid fever, such as a dry, mahogany-colored, and fissured tongue. Pulse 120 per minute and small; very restless; skin hot, dry, sensitive, and of a dusky tint; eyes glassy and wild, pupils dilated; an inveterate disposition to pinch its own nose; some delirium; great languor and spasmodic movements of upper and lower extremities. These symptoms continued, more or less severe, for fifteen days, when

the child began to improve, and on the 18th was convalescent; tongue became moist, and lost its brownish hue and fissures; skin natural, moist; all the secretions normal; took nourishment, and continued to improve for some two or three days, but after that period a relapse of the above-mentioned symptoms re-occurred, and continued for a few days, when it again began to improve, in four weeks from the first attack of typhoid fever. In the beginning of January, 1856, the child was permitted to eat apple pie, rather inferiorly baked, and from that period there was no disposition to take nourishment. On the following day it began to vomit biliary matter, and continued to do so until death—it invariably refused nourishment. Great thirst, loss of appetite, and vomiting of bile, were the only symptoms observed. The alvine evacuations were natural. Patient free from pain or tenderness during the whole period until about three hours before death, when the little sufferer began to complain of excruciating pain in the epigastric region, and sank rapidly, and died on *Jan.* 19, 1856. *Autopsy* twenty-six hours after death. The stomach presented three ridges, where the caustic had probably first rested. At these points the mucous membrane was much thickened and elevated.

Dr. Metcalfe suggested, that, as this was an interesting and novel case in the annals of the Society, the elevations of the stomach be submitted to minute examination by the microscope, to learn what changes, if any, had occurred in its structure, and he moved that Dr. Clark, in connection with Dr. Finnell, be requested to make the examination.

Cirrhosis of the Liver.—Dr. Finnell then presented a specimen of cirrhosis of the liver, obtained from a man 44 years old, who applied a few months since for advice at the Demilt Dispensary, suffering then from debility and abdominal effusion. At one period he had been very intemperate, but of late years had entirely abstained from drink. In May, 1853, copious hæmatemesis occurred, which has been repeated on several occasions. At the time of his application, the prominent symptom observed was the ascites. Examination of the heart and lungs detected nothing abnormal. No albumen in the urine. *Diagnosis.*—Dropsy, a consequence of cirrhosis. *Treatment.*—Palliative.

Autopsy.—*Lungs* healthy, but a single old pleuritic adhesion, which connected not very firmly the base of the left lung to the diaphragm. *Heart* was in normal state, except a few small patches of organized lymph upon the surface, showing that slight pericarditis had formerly existed. *Abdomen.*—The intestines were glued together by extensive old peritoneal inflammation apparently having no relation to the recent operation of paracentesis abdominis. *Liver.*—Right lobe was adhe-

rent to the diaphram, and part of the left, from firmness of adhesions, was in the removal torn off. Cirrhosis had occasioned considerable contraction. On expression, no pus, only serum, exuded. *Kidneys.*—Left had lost entirely the line of distinction between the cortical and middle pyramidal portions, while the right showed a similar diseased condition not as far advanced, effused fibrin giving them a very distinct outline. *Spleen* generally adherent, enlarged, carnified, with much fibrin thrown out around the vessels. *Stomach* contained a large quantity of venous blood—was lined with inspissated mucus, but presented no ulcerations or other lesions.

The opinion seems warranted, that not only the contraction of the portal vein, but also the inflammation of the smaller mesenteric veins during the peritonitis, causing obstruction to the circulation of fibrinous effusion then, and the subsequent contraction of *their* surrounding cellular tissue, produced the ascites.

Dr. Clark remarked, that the cases of cirrhosis were interesting in one particular, viz.: hæmatemesis, without any lesion of the stomach. Dr. Metcalfe had first called the attention of members, a few years since, to the frequent occurrence of this symptom in the disease in question. The liver being firm and hard, the circulation obstructed, it is easily conceived how the hæmorrhage of the stomach is a consequence of the obstructed circulation.

Aneurism of the Aorta bursting into the Œsophagus.—Dr. McCready laid before the Society, a specimen of aneurism of the aorta, which burst into the œsophagus, obtained from a young man, 28 years of age.

Charles H., æt. 28, applied to Dr. McCready, on the 13th September, 1855, for advice. He was a well-built, fine-looking young man, accustomed to much active exercise in the open air. According to his statement, his health had for a number of years been perfect and he now was well, with the exception that he was attacked, at irregular intervals, with an intolerable feeling of pain and oppression at the epigastrium, which, after lasting for a short time, would be relieved by the eructation of a quantity of watery fluid. The fluid thus brought up was without taste or smell. His appetite was good, his bowels regular, the tongue clean, the skin soft, and the complexion clear. The complaint had existed about a fortnight, and the attacks generally recurred once a-day. Bismuth, and afterwards hydrocyanic acid, were ordered, but afforded no relief.

On the 23rd of September, H. summoned Dr. McCready to his house. Within the last twenty-four hours, he stated, he had become

much worse. He complained of a very distressing pain and sense of oppression, which he referred to the pericardium, and to the space under and at the cartileges of the false ribs on either side. He had had repeated attacks of vomiting, and could retain nothing on his stomach. His countenance was pale and anxious, and his respiration was hurried. The pulse was good, but somewhat increased in frequency. The bowels heretofore regular, had not been moved for the last twenty-four hours. There was slight occasional and somewhat hoarse cough; his voice, too, was somewhat hoarse. This condition continued unrelieved for a week, apparently unaffected by the remedial agents employed, (mercurial purges and enemata—nitrate of bismuth, morphia, hydrocyanic acid, with local applications to the seat of pain). Towards the latter part of this time, pain in the left shoulder, and along the inner side of the left arm was much complained of. The peculiarity and obstinacy of the symptoms suggesting that they might be caused by some organic disease. His chest and abdomen were repeatedly and carefully examined, without any morbid signs being discovered. While he was perfectly quiet, he often enjoyed intervals of comparative ease, but the slightest exertion would renew his distressing symptoms. The deadly sickness at the stomach being most complained of. After any unusual exertion too, or after a paroxysm of coughing, the hoarseness would be much increased, so that the voice would become almost extinct. At the end of a week his symptoms were gradually mitigated. He still, however, continued unable to take exercise; walking a short distance, two or three squares, riding in an omnibus, or ascending a flight of stairs, produced a renewal of the sickness at the stomach, and the difficulty of breathing, and the hoarseness.

November 1.—To this time H. remained about the same, though there was perhaps some slight improvement; he was able to take a little more food, and retained it somewhat better; he complained, however, of great difficulty in swallowing solids. On again examining his chest, I found that, in a space just beneath the inner third of the clavicle, and extending as far as the middle of the sternum, there was a decided dullness on percussion; over the greater part of this space a pulsation, synchronous with that of the heart could be felt, and the heart's sounds could be heard with great distinctness. The breath sounds were coarse and rough, and on the left side, the respiratory murmur was interrupted. The left clavicle appeared somewhat crowded upward, and there was no pulse to be felt at the left wrist. *November* 8.—The patient was visited to-day, by Dr. Metcalfe, in

consultation. *November* 10.—H., during the past night, complained of a severe pain in the back, which distressed him greatly, and lasted for a number of hours. This morning he feels decidedly better than he has done for a long time, moving more briskly and freely; the pulse can be felt though feebly in the left radial artery. The abnormal pulsation is stronger; the area of dullness increased, and the clavicle further crowded up. *November* 25.—Much the same as before, the pain in the back has occasionally troubled him, but he now refers his distress mainly to the left side, in the shoulder and under the shoulder blade. There is decided fullness, almost tumor, back of each clavicle; and loud respiratory murmur can be heard there. The natural depression at the top of the sternum is lost, and replaced by a decided swelling. At times, according to the family, now on one side, now on the other, a soft egg-shaped swelling has appeared there. Over the dull space the heart's sounds are now heard, faint, distant, and metallic in their character; the pulse still felt in the left radial, though with difficulty. It is likewise felt in both carotids, though deeper seated than usual.

He yesterday had a terrible and long-continued paroxysm of dyspnæa—he is much distressed by paroxysms of cough. *December* 1.—H. has again had a terrible attack of pain. This time however it was altogether in the back and right side, extending from beneath the clavicle to the hypocondrium; he felt, he expressed himself, as if he were being torn by red hot pincers; the difficulty of swallowing is much aggravated; the pain in the back, too, is becoming more constant and troublesome. He has lost flesh greatly, and has a pale, sallow, anxious look, and is gradually losing strength. The area of dullness has considerably increased, extending from the junction of the second right rib with the sternum, to about half-way between the sternum and edge of the axilla on the left side, or about three inches in perpendicular depth. *December* 17.—During the day H. had been particularly bright, cheerful, and free from pain. Early in the evening he had a severe spell of coughing, attended with a feeling of impending suffocation; suddenly he exclaimed something had burst inside, put both his hands upon his abdomen, became deadly pale, and expired.

Post Mortem Examination revealed the dilatation commencing at the left carotid—left subclavian obstructed. The aneurism lay upon the œsophagus, into which was a large, ragged opening. The stomach contained three pints of blood. The contents of the tumor were fluid—there was an entire absence of laminated fibrine, which circumstance accounted for the varying size of the mass from time to time, and the

nervous phenomena were probably due to the stretching of the par vagum. The bodies of several of the vertebræ were absorbed.

Dr. Clark inquired, if there were any atheromatous patches?

Dr. McCready replied, a few spots were observed.

Dr. Isaacs considered the symptoms explained in a remarkable degree, by the pathological condition of the specimen.

Cancer of Small Intestines.—Dr. Thomas F. Cock presented a specimen of cancerous disease of the small intestines, removed from a female patient, 23 years of age, single, admitted into the New York Hospital, on the 17th of December, 1855. She stated she had been subject to obstinate and frequent attacks of nausea and vomiting, with pain, resembling cramps, increased on pressure in the right iliac fossa. The first attack occurred in June last. Of late the paroxysms have increased in number and severity.

On admission, she was pale, emaciated, and cachetic; abdomen sunken; breath offensive, tongue moist, red, and furred; substance vomited, green and abundant. Physical examination revealed the organs of the chest healthy. The entire trouble was referred to the abdomen. She continued comparatively comfortable for a month after admission, when, 18*th January*, 1856, at the morning visit she was found in much distress, having suffered greatly during the night. Examining the abdomen, a tumor was found situated in the epigastric and umbilical regions, extending to both hypochondria, well-defined, hard, painful to the touch, resembling in form a distended stomach. On the right side there seemed to be a smaller tumor, connected by membranes with the larger mass; also, there could be felt a body of greater density than the remainder of the tumor, movable, situated to the right of the main tumor, giving a sensation similar to the hard parts of the fœtus within its membranes—between the two was a depression. The shape of the whole mass was semilunar, the concavity upward, greatest breadth near the centre; its margin, on the right, irregular; no fluctuation, its surface irregular, almost nodulated. It was conjectured that it might be the stomach, pushed below its natural position, and enlarged by carcinomatous growth. Treatment adopted was palliative and sustaining. The next day she had a copious evacuation of almost pure blood, about a pint; the day after, another. She died on Monday the 20th January.

Post Mortem Examination.—Externally no evidence of a tumor. On opening the abdomen, marks of recent peritonitis observed. No tumor was found. The intestines were everywhere glued together by old adhesions. The parts were so much disorganized, that it was im-

possible to state particular portions of the intestines were diseased, other than to say the disorganization was confined to the small intestines. Commencing at a point where several small tumors existed, the intestines dilate, and below, for a space of eighteen inches, the gut was dark, soft, and permeated with small holes. Some of them were probably caused in removing the viscera, as the fluid in the abdominal cavity was similar to that found in the intestines themselves. Two feet below this it again changes, becoming more normal. The stomach was healthy. The little masses he considers of a cancerous nature.

Luxation forward of the Upper End of the Radius.—Amputation.—Dr. Markoe laid before the Society a specimen of luxation of the radius forward, at the elbow, taken from a man about twenty-five years old, who entered the New York Hospital some weeks ago, with a severe injury of the left elbow, received by a fall from a bridge, down on to a railroad track, striking against the iron rail. When admitted, swelling had already taken place, and much obscured the diagnosis.—The whole limb was deformed; a deformity, however, which was easier appreciated than described. On the anterior aspect of the elbow could be felt a long prominence which moved on rotation of forearm, which motion produced abundant crepitus, apparently directly under the finger. A large lacerated wound existed on the posterior and outer aspect of the joint, from which numerous fragments, apparently from the side of the olecranon, were taken away. The injury was considered so serious, the joint being extensively opened behind, that but few attempts at reduction were made, and those unsuccessfully, it being a mere question of primary or secondary amputation. It was decided to leave the limb for secondary amputation, not overlooking the possibility of its being saved without operation. Hope of such a result was soon abandoned. The inflammation, and suppuration following, was so extensive and severe as very nearly to destroy him, and the arm was finally amputated, as the only means of saving his life. The diagnosis made by Dr. M. of the injury at the time, was fraction of the neck of the radius, with displacement of shaft forward, as in luxation. There was undoubted fracture of the ulna lower down. The specimen shows the head of the radius thrown forward upon anterior surface of the humerus, and the ulna fractured three inches lower down. Now, in grasping the specimen, with the thumb on the head of the radius, the fingers behind embrace the portion of the ulna which is fractured.—The crepitus thus transmitted was so clear and distinct on rotating the forearm, as to lead to, and explain, the mistake made in the diagnosis.

Cast of Trachea in Adult from Croup.—Laryngotomy.—Dr. Metcalfe exhibited a *cast* of the *trachea* obtained from a lying-in patient of Bellevue Hospital, attacked with laryngitis. The symptoms were so urgent as to demand the operation of laryngotomy. She died, partly from asthenia, and partly from asphyxia. On inspection, false membrane was found behind the epiglottis, lining the whole interior of the larynx, and extending down to the fourth division of the bronchial tubes. The specimen is a complete cylindrical cast of the trachea.

Case of Membranous Croup in Child five years old.—Expectoration of an unusual Cast of Trachea.—Death.—Dr. Metcalfe also presented a cast of trachea from a child, Hannah Humes, æt. 5 years, born in New York, was taken sick on the 27th September, with symptoms of *croup*. The mother, not supposing the child to be very ill, treated her herself; giving hot baths, several doses of castor oil and an emetic dose of pulv. ipecac, which, however, did not produce vomiting. The child becoming worse on the 30th Sept., a physician was called to see it, who found it with membranous croup, and, on examination of chest, detected pneumonia in both lungs; there was considerable dyspnœa coming on in paroxysms; pulse one hundred and ten, and feeble; skin hot and dry; tongue slightly coated; bowels regularly moved.

Leeches ordered to the chest, to be followed by fomentations, a purgative of calomel, and syr. ipecac., with tinct. aconite rad. After the child had taken about half an ounce of the syr. ipecac., and about five drops of the aconite, she threw off this membrane; but continued to sink, and died on 1st October. On inspection the exudation is seen.

Dr. M. also presented a similar instance in a girl thirteen years old, and a perfect cast of the bronchial tube, expectorated by a woman fifty-three years. She had been affected for four or five years with what might be termed *fibrous bronchitis.*

Dr. Clark suggested that, in the last case, the casts were the result of local bronchial inflammation, due to the presence of tubercles. He had three times seen similar casts expectorated by persons afterwards presenting symptoms of tubercles.

Dr. Metcalfe observed that in thirty-four cases collected by Dr. Peacock, twenty entirely recovered, and, as a general thing, they were not a consequence of tubercles.

Dr. Peaslee remarked that the specimens presented by Dr. Metcalfe were of great interest, since they show the same pathological condition of the air passages at very different periods of life; from infancy to over fifty years. In all these cases, inflammation of the lining mem-

brane of the air passages had occurred, and a false membrane had been formed in consequence; the disease being called "croup" in the first-mentioned cases, and "fibrous bronchitis" in the last one. Dr. P. does not believe there is anything *specific* in croup, whether pseudo-membranous or not so. He regards it as a *mere simple laryngitis*, at first, becoming also a tracheitis, as it descends into the trachea; and since it also often extends downwards into the bronchial tubes, (as these specimens also demonstrate), it is then, of course, a *laryngo-tracheo-bronchitis*. Whether a false membrane is formed or not in croup, depends upon other circumstances, and not upon the nature of the inflammation. If the plasma exuded upon the inflamed membrane be of good quality, and remain at rest and in perfect contact, it will become fibrillated (coagulated) into a false membrane; in the opposite circumstances the latter cannot be formed. In cases of laryngo-tracheitis, it is, therefore, far more likely to be formed in infants and young children, who have less power to expel the plasma when first exuded, or soon after. In adults, for the same reason in part perhaps, females, are more liable to the pseudo-membraneous form of laryngo-tracheitis (or croup) than males are. Dr. P. had before been himself acquainted with but three cases of croup in adults; and these were all in females. The last specimen shown by Dr. Metcalfe was one of pseudo-membraneous bronchitis, and the others were of pseudo-membraneous laryngo-tracheitis.

Another point of interest was suggested to Dr. P. by the fact, that the false membrane lining the larynx and trachea, was probably completely detached from the mucous membrane (if he was correctly informed) before death, and had shrunk somewhat, so as to obstruct the air-tubes more than while in perfect contact. In all cases of croup with false membrane, Dr. P. stated that the latter will become spontaneously detached if the patients can be kept alive a sufficient time. For the new membrane is never vascular, and there is no vital connection between it and the mucous surface beneath.

Dr. P., therefore, thought the inference unavoidable that a great object in the treatment of croup with false membrane, should be to sustain the patient's strength; and that the heroic treatment of this disease, so often adopted, is all wrong; at least after the disease is fairly developed, and the new membrane is already formed.

Necrosis of Tarsus.—Dr. Conant exhibited a specimen of *necrosis* of *tarsus* occurring in a patient, 19 years old. About fourteen months ago, the patient run a pin in the inferior part of the foot—the pin was removed, but still she suffered much pain, and the next day symptoms

of tetanus appeared, which were, however, restrained by the administration of opium. An abscess formed sometime after, and continued to discharge by two openings on the top of the foot. She suffered much constitutionally, and it was concluded to remove the leg—the operation was performed, and, on examination, it was found that the bones were all anchylosed, the os calcis being only diseased.

Cancer of Colon.—Dr. Ayres presented a specimen of *cancer* of the *colon*, which was obtained from a woman, 68 years old. Two and a-half years since, he was consulted for some slight gastric derangement. She had then a tumor in the right iliac fossa, which he attributed to impaction of the bowels. The fæces were removed, and still the tumor remained. She became emaciated and pale; the countenance assumed an icterode hue; had alternations of diarrhœa and constipation; occasional hæmorrhage from bowels. A brother died from cancer of the brain. *On Inspection*, the caput coli is seen hard, firm —the intestines filled with fungous masses.

SOCIETY OF STATISTICAL MEDICINE.

Regular Meeting, January 14, 1856.—Dr. Peaslee, V.P., in the Chair.

(*Reported by* Dr. G. Benedict, *Secretary.*)

Remarks on Paracentesis Thoracis, based on an Examination of One Hundred and Thirty-Two reported Cases; by John A. Brady, M.D., of Brooklyn, N. Y.—Dr. Brady introduced the subject of his paper by reporting in considerable detail, a case of pleuritic effusion, in a man aged 25, occurring first upon the right, and subsequently upon the left side. He was treated with marked success by repeated blisters, slight ptyalism, followed by acetate of potash, and iodide of potassium, etc. After several months he began to decline in health without any perceptible cause, and in spite of medication. He died from the exhaustion of delirium following an over-dose of laudanum, which he had incautiously swallowed. On examination, the left lung was found to be healthy; the right was firmly united to the walls of the chest by old and very dense bands. The upper portion was healthy and permeable to air; but the lower portion was condensed and perfectly solid. No tubercles were found in either lung, and the cavity of the thorax was free from fluid.

In the course of his reflections on the above case, Dr. Brady had been led seriously to regret that the operation of paracentesis was not performed. For, notwithstanding the treatment instituted caused the absorption of the fluid, the process was so tedious and slow, and the

pressure of the fluid continued so long, as to impair seriously the functions of the lung, so that, even had he lived, it was doubtful whether the lung would ever have attained its former size and usefulness. His attention having been directed in this manner to the subject of paracentesis thoracis, he was led to collect together all the cases of empyema and hydrothorax reported in the British and American Journals, in which the operation has been performed. And the remainder of his paper was devoted to an analysis of the one hundred and thirty-two cases collected, together with a brief examination of some of the points connected with the operation.

Of the one hundred and thirty-two cases in which the operation was performed, it resulted in complete recovery in seventy-nine cases; fourteen were relieved; thirty-seven died; in one the result was unknown, and in one no effect whatever was produced. Of those who died eleven were carried off by phthisis; four were sinking, and beyond the probability of recovery when the operation was performed; one died from the effects of an opiate; in one case the fluid could not be reached; and in one a doubt existed in the mind of the medical attendant whether active treatment after the operation might not have saved his patient's life. This leaves only nineteen remaining whose deaths could by any possibility be attributed to the operation. It appears also that in the majority of the cases reported, the operation was not resorted to until the hope of relief from any other source had failed, when the lung had become more or less altered in structure, owing to the pressure of the fluid, and the patient's strength exhausted by the continuance of a painful and harassing disease. In all of the cases, with one exception, the removal of the fluid afforded marked, and in many cases entire, relief. There is but a single exception. In this case two operations were performed; the first of which afforded relief, but the second was attended by no such beneficial result.

Of those who were operated upon, the fluid had existed—

Less	than	1	month	in 15 cases.
"		2	"	19 "
"		3	"	12 "
"		4	"	8 "
"		5	"	4 "
"		6	"	3 "
"		7	"	3 "
"		8	"	3 "
"		9	"	5 "

Less than 2 years in 2 cases.
" 3 " 2 "
" 7 " 1 "

And in 55 cases the duration was unknown.

					Recovered.	Relieved.	Died.
The effusion was	pus	in	52	cases, of whom	37	2	13
"	serum	"	59	" "	29	12	18
"	sero-purulent	"	8	" "	5	0	3
"	unknown	"	13	" "	10	0	3

Of those who died, the effusion had existed within 1 month in 2
" " " " 2 " 1
" " " " 3 " 3
" " " " 4 " 3
" " " " 5 " 2
" " " " 6 " 1
" " " " 7 " 1
" " " " 9 " 2
" " " " 2 years in 2
" " " a long time " 1
" " " unknown " 19

The largest amount evacuated during the whole treatment was of pus, 22½ lbs.; serum, 15 pts.: and the smallest, pus, 5 oz.; serum, 1½ oz.

The operation of tapping the chest for the removal of fluid collected therein, has been since the days of Hippocrates; and although one would think a sufficient length of time had elapsed since its practice began, for the profession to settle the question as to its usefulness and safety, still there is no operation within the province of the surgeon, concerning the practice of which there has been more controversy and difference of opinion than the one under consideration. Of late years the valuable papers of M. Trousseau of France, Drs. Hughes, Cock, and Hamilton Roe, of Great Britain; and Drs. Bowditch, Wyman, and Pepper, of this country, have done much towards convincing the medical profession of its practicability and safety in all cases where fluid has been thrown out in the thoracic cavity, the result of pleuritic inflammation. A careful examination of the result of their labors, proves that, in their hands at least, it has not been attended by any of those unpleasant and dangerous consequences, that had almost universally been attributed to it.

The objections urged against the operation apply almost entirely to

it as performed in accordance with the method laid down in most works on surgery; but, as practised by surgeons of the present day, the operation is perfectly easy, safe, and practicable. The principal objection brought against the operation is, that by it air is admitted to the pleural cavity, and that its presence there compresses the lung, causes a decomposition of the fluid, thereby lessening the patient's chances of recovery; and that it also increases the inflammatory action already going on. These objections if true would divest the operation of much of its usefulness, but, although the admission of air cannot always be prevented, the quantity is so small when the operation is properly performed, as to cause no trouble whatever; on the contrary, it has been found to assist in the removal of the fluid—is not sufficient to compress the lung, and is readily absorbed in the course of a few hours. Dr. Bowditch, in speaking of this objection, (*Am. Jour. Med. Sciences*, 1852.) says, "The admission of a small quantity of air does not necessarily cause trouble, unless it be frequently repeated, as in cases of pneumothorax and of puncture of the thorax according to the old operation." Dr. Fergusson says, "I have never seen any evil result arise directly from the admission of a small quantity of air," and Dr. Hamilton Roe, in speaking of this objection, uses the following language, "In every case which has fallen under my observation, a considerable quantity of air, entered into the pleura during the operation, and in some of them so freely as to excite all the physical signs of pneumothorax, but in none of them did it produce any permanently evil effect, a few hours being sufficient for its spontaneous removal; in one instance only did it cause even temporary inconvenience."

Another objector, Dr. Hope, says, "The operation is unnecessary, and that all cases in which this operation has been instrumental in producing a cure, the like result could have been attained without its aid;" and in proof thereof he cites 35 cases, cured by the use of mercury. This assertion, experience proves to be untrue. If the fluid effused be simply serum, and the patient's constitution be not already broken down, and the amount effused be not too large, then if a judicious treatment be instituted a reasonable hope may be indulged that the fluid will be removed by absorption. But, if, on the contrary the amount of fluid thrown out is so large, as to interfere materially with respiration, or it has accumulated so rapidly as to prevent absorption, then the operation must be resorted to.

When should the operation be performed? Most writers are of the opinion that the fluid should be removed at an early period of the disease; Drs. Hamilton Roe and Bowditch say it should not be

allowed to remain longer than three weeks. When the fluid effused in the pleural cavity is serum alone, unless the quantity is too large, its absorption and consequent removal can be brought about, in a majority of cases, by the use of proper remedial agents. But if the quantity be so large as to threaten suffocation, or if the pleural sac is much distended by a rapid effusion, then the operation should be performed. It should be borne in mind that, if the fluid is allowed to remain too long, phthisis is almost certain to supervene; for that reason, the operation should not be too long delayed. If the matter be purulent, valuable time should not be lost, in waiting until it is broken down and then absorbed, or until it establishes an opening for itself, but the operation should be performed immediately. Of course the above remarks apply to cases of uncomplicated hydrothorax and empyema. But even if phthisis be present, the removal of the fluid, will in many cases, afford considerable relief, and so lengthen the life of the patient. If possible all inflammatory action should be subdued before the operation is performed.

Before the operation of paracentesis is performed, an exploration should be made, in order to ascertain with certainty the character of the effusion. In regard to the exact locality at which the puncture should be made, discrepancy of opinion exists. Most operators, however, prefer the 5th intercostal space, about midway between the sternum and spine, or just posterior to the digitations of the serratus magnus. When the fluid points externally, the puncture should be made with a lancet in the most prominent part of the swelling. Several instruments have been invented for puncturing the chest, but a small sized trocar appears to answer the purpose as well, and to be as safe as any other instrument; care should be taken to have its point perfectly sharp. Some operators make an incision in the integument first, but this does not appear to be absolutely necessary; a difference of opinion exists among operators as to whether the whole or only a portion of the fluid should be removed at once. This matter however must be left entirely to the judgment of the operator. If the effusion be recent—when the lung has not been compressed but a short time, no harm can result from allowing the fluid to be evacuated at once. If dyspnœa or syncope supervene, or air begins to enter the cavity, then the discharge should be stopped at once. In a majority of the cases reported, in which the operation was successful, the return to health was gradual and progressive.

It would, therefore, appear that the operation is perfectly easy, safe, and practicable, and that, although it will not in all cases cure the dis-

ease, it never fails to remove many of the most distressing symptoms attendant upon it.

Dr. PEASLEE said, the opinion he had formerly entertained, that the action of air upon the surface of the pleura was unfavorable, he had now discarded. He referred to a case in which he had injected a solution of iodine. The wound having healed, he repeated the operation of tapping, and injected creosote. The patient could taste the substance afterwards, showing that an opening had formed from the pleural cavity to one of the bronchial tubes.

A physician with whom he was acquainted was in the habit of operating frequently and of using injections. He also spoke of a case of hydrothorax where 85 ounces of serum were evacuated by him at one operation, curing the patient. He never knew a case of empyema cured by one operation. He is not at all particular about excluding air from the pleural cavity, though this may be very effectually accomplished in a very simple manner. A plan which he had employed was the use of a flexible tube filled with water at the moment of introducing it through the parietes of the thorax—(through a puncture made by a trocar of the same size), the distal extremity being at the same time immersed in a basin of water, which was to receive the pus or serum. While this was freely flowing, the tube could be lifted from the water, and a sufficient quantity of the secretion received for examination. The water in the basin being measured before the operation, the amount of fluid withdrawn is at once ascertained. In the operation of paracentesis abdominis, he thinks the danger of admitted air producing peritonitis is very much overrated.

In hydrothorax after the second operation, the discharge is more purulent than the first. Is this owing to the ingress of air? Not necessarily. At the first operation you may have no pus. The fluid is the plastic exudation, or it is serum in some form. Removing the secretion gives the membrane an opportunity to secrete. It is so macerated, as it were, as no longer to be a serous membrane—in function and will not, therefore, secrete true serum. It will secrete pus or something very much like pus. It is far more difficult to absorb pus than serum. He doubted if true pus is ever absorbed. He thinks the same facts apply to hydrops articuli, and to cases where the peritoneum is affected instead of the pleura. He prefers to operate as far back as practicable, unless when there is a bulging point or fluctuation. With his present views he would always put in a tent (if the fluid proved to be pus), and keep it there, and keep the patient mostly on the affected side.

PART SECOND.

FOREIGN MEDICAL RETROSPECT.

PRACTICAL MEDICINE.

Bronzed Skin and Disease of the Supra-Renal Capsules.—The Senior Physician of Guy's Hospital has recently added to the list of benefits which Medical science had already received at his hands, by the publication of a monograph on the "Diseases of the Supra-renal Capsules." In this work, Dr. Addison, as probably most of our readers are aware, advances the opinion, that destructive disease of these hitherto little regarded organs is attended by most serious constitutional mischief. His views, which are, indeed, the simple expression of his clinical experience, and are supported by eleven carefully narrated cases, may be concisely expressed as follows: 1.—That a peculiar browning or bronzing of the skin is indicative of disease of the supra-renal capsules. 2.—That it may depend on any disease which affects the disorganization of these bodies, *e.g.*, cancer, tubercle, abscess. 3.—That patients suffering from this symptom fall gradually, and without obvious cause, into a peculiar form of debility, which results almost invariably in death within a limited period. 4.—This form of debility is rarely attended by much emaciation, and the subject of it, although with much flabbiness of tissue, retains throughout a general bulkiness of frame which contrasts strongly with his extreme feebleness. 5.—That, usually, no other important visceral complication supervenes. —*Med. Times and Gaz.*

Albumen as a Cholagogue..—Dr. R. Gieseler, of Göttingen, thus writes (*Zeitschr. für Rat. Med.*, 1854, bd. 5):—"I am anxious to call the attention of the profession briefly to the employment of the albumen of hens' eggs in certain forms of jaundice. Bernard's experiments, showing that this substance is assimilable only through the intervention of the hepatic function, immediately suggested to me the idea that in albumen we might find an adequate excitant of the liver. I inferred, first, that fatty nutriment, and in a higher degree albuminous articles of diet, must be avoided in inflammation of the liver; and, secondly, that in torpid conditions of that organ, we might possess in albumen a remedy capable of stimulating it to increased activity. If to the liver be assigned the task of rendering albumen adapted to assimilation, this substance must be a stimulant to it, which will, *mutatis mutandis*, set its function to work in the same manner as the administration of salines does that of the kidneys. It is scarcely necessary to add, that the establishment of these results by experience, must secure to albu-

men not merely the character of an adequate stimulant, but also pre-eminence over all other cholagogues; since the action of the latter is very uncertain. I think it unnecessary to demonstrate the remarkable efficacy of albumen in this respect by the recital of cases, since it was, as I soon learned, already known to our predecessors. It, however, appears to me not unimportant to point out the source whence it would appear the recommendation to employ albumen as a remedy in jaundice was originally derived. Charles White, in his work on the *Treatment of Pregnant and Puerperal Women*, states that he once suffered from jaundice, and was very much reduced. Soap, aloes, iron, and rhubarb, had been taken without the least benefit. A navy officer happening to visit him, assured him he would cure him in a short time He told him, in fact, that while on a voyage, some time before, he was attacked with the same disease, and had in vain used the remedies prescribed by the surgeon of the vessel. A Spanish physician, of the island of Minorca, then advised him to take every morning, while fasting, two raw eggs, both yolk and white, in a glass of water; and to repeat the dose with an egg every four hours during the day. He followed this advice, and in three days his motions were again colored with bile. White tried the plan suggested, and found the effect attributed to the albumen to be confirmed: in three days, the fæces were colored, which they had not been for six weeks before. He continued the use of the eggs for some months. He subsequently recommended the remedy to several patients, and always with good effect except in cases in which the jaundice proceeded from the effect of gall-stones."—*Dub. Quart. Jour.*

Treatment of Chorea by Blisters.—Dr. Max Simon, several years ago, called the attention of physicians to the treatment of chorea by blistering. Since then, in a sanitary official Report, M. Vandesleben has recounted three cases of prompt and permanent cure by the employment of blisters applied upon the arm and neck. Dr. Jensis has also published cases of a cure obtained by the same means, and remarkable from the fact, that the convulsive movements first ceased in the limb where the blister was placed, and finally gave way before blisters placed upon the other limbs and on the neck. M. Delaharpe, physician in Louisberg, has, in his turn, published four favourable observations of this mode of treatment, and makes the following remarks upon the subject: "Chorea being almost always more intense upon one side than on the other, he chose the inferior extremity of the most affected side; for making the first application in the leg the blister was placed below the head of the fibula, and in the arm below the insertion of the deltoid—it was left on until the blister was raised. The first dressing produced ordinarily an increase of the choreic convulsions; but this did not continue, and upon the second or third day after the application, the disordered movements were much mitigated, not only in the limb where the blister was applied, but in the others also. As soon as the first blister had ceased to suppurate, another is applied—its curative effect is more marked than the first, for often all the spasms have ceased in seven or eight days of this treatment. When the chorea is

intense, and of long standing, a third blister will be required; it should be placed upon the neck. This last application is, above all, necessary if the head be much affected. At the end of six or seven days the cure is in general completed—the chorea has disappeared—but in order to avoid a relapse it will be necessary to have recourse to general treatment." M. Delaharpe remarks, that in the cases of thin weakly children the action of the blisters is most beneficial. In the cases of stout, strong children, which, however, are rare, success is less certain. When the spasmodic movements have disappeared, cod liver oil, quinine, and iron are to be administered according to the indications.—*Bul. Gen. de Ther. and Dub. Hospt. Gaz.*

Linear Cauterization of the Thorax in Asphyxia.—M. Faure's proposal is founded upon numerous experiments on animals asphyxiated, in a variety of modes, and on one case of asphyxia by charcoal, occurring in a girl. The actual cautery, he observes, has long since been employed in distinguishing real from apparent death, and for the purpose of resuscitation; but it has not succeeded, owing to the absence of proper method and due perseverance. When properly used, however great the danger, as long as even the feeblest respiratory movements continue, it will establish a favorable reaction, and, to this end, is far superior to all other means. The following are the conclusions arrived at: 1.—When the heart has entirely ceased to beat, or when the pulsations are fewer than three in five seconds, death is certain, whatever may be done; but, except in these very extreme cases, cauterization may restore life. 2.—Deep and long parallel lines must be traced, by a strongly-heated iron, along the upper and lateral parts of the chest, opposite the four or five first ribs, this being the part of the body that longes tretains the faculty of being stimulated. 3.—The first effect is a muscular contraction, which is quite local, and without sign of pain: the ribs then move, the thorax enlarges, and inspiration becomes more ample. Sometimes more than a minute elapses before any sign of sensibility can be induced, even by the most intense burn. 4.—When the general sensibility has become aroused, it is of the highest importance to keep it excited for a long time; and to this end flagellation is the easiest and most certain means. It must be persisted in for a long time, and the patient must be well watched. 5.—Frequently asphyxiated persons die after having been restored; but this must be referred rather to the shock sustained by the economy, in consequence of the suppression of respiration, than to the introduction of any poisonous principle, inasmuch as such death has occurred in persons who have not been exposed to any toxical influence, as in those drowned.—*Comptes Rendus.*

Skins Diseases. By Prof. Hebra.—VIII.—*Ichthyosis simplex*, 3 cases, all hereditary. Soft soap applied night and morning for six days, facilitated the removal of the hypertrophied epidermis, but the disease always returned.

IX.—*Lichen*, 16 cases, (10 males, 6 females). Under this term

Hebra places all cases of reddish papulæ, about the size of a mullet seed, which were accompanied with itching, and were generally increased by scratching. In all these cases the disease was removed in a few weeks by the use of baths.

X.—*Lupus*, 43 cases (17 males, 26 females). The face was most commonly the seat of the disease, but it was also observed on the arms and legs. Many of the patients showed traces of previous scrofulous disease, of glandular swellings, or caries. Some of the cases presented a confirmation of the theory adopted by certain French dermatologists, that lupus is dependent on congenital syphilis, as was made out partly by the history of their cases, and partly by the benefit they received from anti-syphilitic treatment. In the other cases the internal use of cod-liver oil, and the frequent local application of solid nitrate of silver, effected the cure of 13 men and 15 women.

XI.—*Pemphigus*, 1 case, a woman, aged 52 years. Like all the cases previously observed by Hebra, it terminated fatally in superficial gangrene and anæmia. The most varied kinds of treatment were unsuccessfully tried.

XII.—*Prurigo*, 54 cases (48 males, 6 females). The treatment consisted in the inunction of soft soap, sulphur, and common baths, and the application of tar, in conjunction with a nourishing diet and washing with cold water. By these means all the cases were soon benefited, and the less severe ones rapidly cured.

XIII.—*Psoriasis*, 33 cases (20 males, 13 females). The treatment consisted partly in the application of external means, namely, warm baths, taken daily for ten hours continuously, soft soap employed in the same manner as in pityriasis (see p. 996), and oil of cade rubbed in once daily; and partly in internal remedies, namely, the Asiatic pills (℞ Arsenici albi ʒi; piper. nigr. ʒix; mucilaginis q. s. ut fiant pill. 800), beginning with one and increasing to three daily, in 2 cases, Pearson's solution (consisting of four grains of arsenate of soda dissolved in four ounces of distilled water), fifteen drops three times a-day, in 5 cases, and Donovan's solution in 1 case. The general result was, that 10 men and 11 women were completely cured, and 4 men and 2 women much relieved. The others were under treatment at the period when the report closed.

XIV.—*Scabies*, 1408 cases (1269 men, 137 women). In men, it most commonly occurred on the hands, and next in order of frequency on the penis, nates, feet, and elbows; while, in women, the order of frequency was as follows—the hands, nipples, axillæ, nates, feet, elbows, and umbilicus. The treatment consisted in the inunction of Wilkinson's ointment, night and morning for two days, to the affected parts, which were then covered with soft rag; care being taken that it should not come in contact with the rest of the body. (This ointment is composed as follows: of common sulphur and tar, each one pound and a half; of chalk, four ounces; and of yellow soap and lard, each one pound). On the third and fourth days, the patients were left undisturbed; on the fifth day they were well washed with soap and water, and then placed in a tepid bath. This treatment was adopted in about 20 cases.

When the disease affected the whole body, or when an artificial eczema had been induced by the improper application of local remedies before admission to the hospital; green soap, a variety of the ordinary soft soap, was applied. When hard patches remained on the nates, or other parts which are exposed to pressure, potash fomentations were employed (ʒi of caustic potash to ʒxx of water). When the eruption was confined to the hands, hand baths of common sulphate were used, in the following manner: one drachm of common sulphate and one scruple of muriate of ammonia are dissolved in a little distilled water, which is then diluted till the whole amounts to six pints; a handful of bran is then thrown in, and the patient inserts his hands, rubbing them well together, when the bran facilitates the destruction of the pustules. These baths, used twice a-day, effected a rapid cure. When obstinate pustules or excoriations, arising from itch, occurred in other parts of the body, this solution was successfully used as a fomentation.

Many of the new methods recently suggested in Germany, and strongly advocated by their respective authors were put to the test, but the results were not so satisfactory as could be wished. Of these methods, Wacherer's was the most successful. It consists in the inunction of oil of turpentine in the affected spots. The number of patients treated in this way was 68; and the average period of treatment till a cure was effected was four days and a half. They were all, however, simple, uncomplicated cases.

Pericarditis, with Effusion. Successfully Treated by Tapping and Injection of Iodine.—Dr. Aran has reported, in the *Bulletin Therapeut* a cass of pericarditis, treated by tapping and the injection of iodine. The patient was a man, æt. 23, of delicate constitution; the signs of pericardial effusion were well marked, the quantity being so great as to cause great oppression; a great variety of remedies had been tried in vain, and it was resolved to puncture the pericardium. The operation was performed with a capillary trocar, in the fifth intercostal space, two or three centimetres from the extreme limit of dullness. About twenty-six ounces of reddish serum were withdrawn, the fluid at first flowing *per saltum*. Great relief followed. An injection of distilled water and tincture of iodine, an ounce and a half of each, with fifteen grains of iodide of potassium, was then thrown into the cavity of the pericardium, and after a few moments withdrawn. No ill effects followed, and twelve days after the same operation was again performed owing to a reaccumulation of fluid. A dram of the iodide was this time used; air entered also, but the operation was successful, as the fluid did not again collect, to any considerable extent.

SURGERY.

Tracheotomy in Croup, By Dr. Trousseau.—I am firmly decided, for my part, not to be discouraged, but to advocate tracheotomy with so much the more conviction, as the proportion of successful cases increase; and if that proportion remained, even as it was ten years ago, I would still proclaim the necessity of tracheotomy, and I would not

cease to uphold it as a duty—a duty as imperious for a surgeon as the ligature of the carotid artery, after a wound of that vessel, even if death followed the operation as often as the cure. Here are the results of my operations for tracheotomy, during the year 1854 :—I operated on nine children. Of these, two died, while seven were cured, and are now living in perfect health. Certainly, the proportion of cured is not always so great; still, if I make the sum total of the operations I have performed in the last four years, I find twenty-four operations, and fourteen cures, equivalent to more than half.

At the Hôpital des Enfans Malades, in the last five years, the proportion of cures has been nearly a quarter. Here are the official numbers, viz :—

1850	20	operations	6	cures,	about 1-3rd.
1851	31	"	12	"	more than 1-3rd.
1852	59	"	11	"	less than 1-5th.
1853	61	"	7	"	only 1-9th.
1854	44	"	11	"	only 1-4th.
	215	"	47	"	about 1-4th.

This result is considerable, if we remember the social condition of the children who are brought to the Hospital, the deplorable treatment they are subjected to, by "sagefemmes," quacks, etc.; in a word, those persons the poor generally consult in preference to doctors. We should bear in mind, too, the unfavorable condition of the Hospital, where the children operated upon are placed in the midst of the most varied and fatal contagion; so much so, that often, when the operation for tracheotomy is succeeding as well as could be desired, the scarlet fever, measles, small-pox, or whooping-cough, cause the most fearful complications.

I do not doubt that half the operations performed out of Hospital are successful, always provided tracheotomy takes place when the chances of cure are possible. This restriction is important; for, if the diphtheritic infection is thoroughly rooted in the system, if the skin, and particularly the cavities of the nose, are invaded by this special phlegmasia; if the quickness of the pulse, delirium, prostration, indicate a profound poison, and if the danger is rather in the general state, than in the local lesion of the larynx or of the trachea, certainly the operation should not be tried, for it is invariably fatal; when, however, the local lesion constitutes the principal danger of the disease, no matter at what degree asphyxia has arrived, even if the child has but a few moments to live, tracheotomy succeeds invariably, as well as though it had been tried three or four hours sooner.—*Med. Times and Gaz.*

Unreduced Dislocation of Hip treated by Extension.—A case of dislocation of the hip, unreduced four months, which we saw under the care of Mr. Cock, at Guy's Hospital, deserves to be noted, as here the plan by manipulation with chloroform, originally mentioned in *The Lancet*, did not succeed in the reduction. A very good limb was subsequently obtained, however by the constant tension of a heavy weight

and traction, so kept up after the violence, unavoidably used under the chloroform, that the new plastic matter, it is conceived, formed a new acetabular cavity over the site of the old one. In very old dislocations of this class, the experience at Guy's Hospital would seem to point to a partial or complete filling up of the old acetabulum, so that even though the surgeon might bring back the head of the bone to its normal position, as was done here once or twice, it will slip again over the rim, or perhaps towards the sacroischiatic notch, the articular cavity being unable to receive it. It was singular that after inhalation of chloroform the foot, in place of being as usual in such cases *inverted* and shortened, had nearly regained its normal length, and was *everted*. Under these circumstances, Mr. Cock placed the leg on a straight splint, and subsequently, when the splint could not be borne, a weight and pulley, playing over the foot-board of the bed, served to keep up extension. For two months this mode of treatment was persevered in, (from the middle of August to the middle of October,) and when we saw the man about to leave the hospital in the first week of November, there was a shortening of the limb scarcely appreciable, the foot was nearly straight, and the patient felt in every way improved.—*Lancet.*

Gastrotomy successfully performed for Internal Strangulation. The following interesting case is from the *Dublin Hospital Gazette:*—A man, 40 years of age, had had from infancy a reducible inguinal hernia in the left side. On the 7th of September, symptoms of strangulation appeared, but without the local signs of strangulated hernia.

12th September (seventh day), the patient was unrelieved; vomiting with constipation continued; the pulse was weak, and the patient greatly sunk; the abdomen was tense and tympanitic; the distended intestines formed prominent swellings. No trace of hernia existed in the inguinal region; the finger could be easily passed into the outer ring. After having been bled, the patient said the old hernial tumor had disappeared; internal strangulation was suspected, and gastrotomy was decided on.

The patient having been put under the influence of chloroform, M. Borelli cut transversely into the left iliac fossa, through the skin first, then through the muscles and peritoneum. A mass of large intestine protruded; no trace of strangulation existed, nor was any hernial sac to be found. The hand was introduced into the cavity of the abdomen, and at last a tight, hard ring was discerned, by which an intestine was strangulated. This was divided with a bistoury, (bistouri de Pott) the intestines replaced, and the wound closed by sutures, etc.

The operation lasted twenty minutes. Relief from vomiting was immediately obtained, but meteorismus and pain continued for two days without any alvine discharges. At last the bowels were freed. On the fourth day after the operation, the patient was twice blooded; on the fifth day, the bowels having been well freed, the patient was much better; his recovery was retarded by an attack of intermittent fever which yielded to quinine, and in the beginning of October he was quite well.—*Gazette Medica Italiana.*

MIDWIFERY.

Functional Derangement of the Liver, as a Cause of Uterine Disease.—The following is an abstract from (*Lancet*) Dr. Mackenzie's paper on this subject. He believes that Hepatic Disease may cause Uterine Disease in three ways:—

First, through the medium of the direct sympathy subsisting between the uterus and the liver; secondly, through the derangement of the assimilative processes, which invariably results from chronic hepatic disturbance: and, thirdly, through the debility of the nervous system, which sooner or latter inevitably follows upon long-continued derangement of any important organ of the body. From the first of this series of causes could be deduced many uterine affections of a variable and casual character, such as hysteralgia, leucorrhœa, and menstrual irregularity; from the second, many functional and structural lesions of the uterus, of a more fixed and persistent character, such as congestion and inflammatory conditions, indurations, hypertrophies, fibrous growths, certain forms of leucorrhœa, and rheumatic hysteralgia; from the third, a predisposition to uterine disease generally, the precise character and nature of which would vary with the nature of the exciting and other occasional causes. In connection with this part of the subject, attention was directed to the generally depressed state of the nervous system which accompanies the majority of uterine affections, and this, from various facts referred to by the author, was regarded by him as being rather due to the coincident hepatic than uterine complaint. The latter had, however, received greater attention, because, whilst the liver was an organ of dull sensibility, the uterus, on the other hand, had extensive sympathies with the sensorial parts of the nervous system, and its functional and structural conditions admitted of the closest scrutiny. The treatment of these cases should, in his opinion, be conducted with reference to three principal indications—first, to restore the tone and functional activity of the liver by the persevering employment of small, undebilitating doses of mercury, keeping strictly within the tonic and stimulating range of the remedy; secondly, to improve the assimilative functions generally, by careful attention to dietetic and hygienic measures, together with various therapeutical means, which were cursorily alluded to; thirdly, to restore the tone and vigor of the nervous system, which had been impaired by the long continuance of hepatic derangement. The general means adapted to this purpose were treated of, and the author took occasion to lay before the society some observations upon the remedial powers of amorphous phosphorus in certain affections of the uterine organs, attended with weakness and irritability of the nervous system. He had given it a large and extensive trial in these cases, and in some had found it remarkably beneficial. It could be given in doses averaging from ten to thirty grains, and, although insoluble, it readily diffused itself in water or any aqueous vehicle, and could be conveniently given in that way. It appeared to act as a direct tonic or stimulant upon the uterine system, and when properly prepared could be given without any risk or danger. He had given it with much success in certain cases of amenorrhœa, hysteria, and passive

menorrhagia. He had known pregnancy to supervene upon its employment after a lengthened period of sterility subsequently to marriage, and had found it useful in correcting the tendency to miscarriage when dependent upon morbid weakness or irritability of the uterine organs.

Premature Labor Induced by Means of the Douche.—By G. Jones, Esq.—The first case was a female in her fortieth year, and in her ninth pregnancy. She had been attended in two previous labors by him, and the last was terminated by the use of the forceps; the previous pregnancies had either resulted in abortion, miscarriage, or, in one instance in which she proceeded to the full period of gestation, in being a twin case; the children in all were born with compressed and elongated heads, and generally died soon after birth. There was no deformity of the pelvis, properly so termed, it being of that kind known by obstetricians as the "pelvis æqualiter justo minor." At the expiration of the thirty-second week, July 3rd, 1854, he commenced applying the douche, using first hot and then cold water, by the aid of Higginson's India rubber enema apparatus, to which a small pipe of gutta percha had been attached, so as to be enabled to reach nearer the os uteri; the douches were repeated at intervals of twelve hours, and after the fourth douche pains came on and continued all night, but they subsided in the morning; these did not again occur until after the twelfth douche, and it required a thirteenth douche before they became effectual, and she was safely delivered, at 6 P.M., of a living female child.

He considered, on reflecting on this case, that if the douches had been followed up more quickly after the fourth, when the pains first came on, a more satisfactory result would have followed, and that no advantage had been obtained by alternating the temperature of the water used; consequently, in the next case, he determined to act on these convictions, and, as would be seen, with benefit.

The second case was that of a very short female, aged 28, with a curvature of the spine, and deformed pelvis, in her third pregnancy; she had been delivered in her two previous labors by craniotomy. Her menses ceased January 10th, 1854. August 3rd being the expiration of the thirtieth week, he commenced applying the douche, using, as in the previous case, the flexible caoutchouc apparatus, but only warm water; the injections in this case were applied for the space of a quarter of an hour, and repeated at regular intervals of four hours. Two hours after the fourth and last douche was given, he was sent for, and found the os uteri well dilated, and the membranes protruding to the os externum, and the pains following every five minutes. Labor was completed in another hour, being nineteen hours and a half from the administration of the first douche; the child was a living male.

On the Action of Digitalis upon the Uterus. By W. H. Dickerson.—The writer commenced his paper by stating that during the month of October, 1854, a patient in St. George's Hospital, laboring under most severe menorrhagia, was cured by the infusion of digitalis, exhibited for the relief of cardiac affection, from which she also suf-

fered. In consequence of this he had been induced to try the remedy, by the permission of Dr. Lee, in a series of cases of uterine hæmorrhage which had occurred in the hospital. These cases, of which a table is given, were seventeen in number, and the general results of their treatment were as follows:—In every case of uterine hæmorrhage, unconnected with organic disease, requiring the employment of active remedies, admitted into the hospital after October, 1854, the administration of digitalis was had recourse to as the sole treatment, and the discharge was invariably arrested by it. The time which elapsed before the hæmorrhage subsided varied with the dose in which the digitalis was exhibited. When large doses were given, as an ounce to an ounce and a-half of the infusion, the discharge never appeared after the second day; when smaller doses, it never continued beyond the fourth day. In uterine hæmorrhage connected with organic disease, the remedy acted with less certainty; its exhibition was required for a longer time, and the effect was sometimes transient. The author then spoke of the mode in which the digitalis operated in controlling uterine hæmorrhage; and after concluding that its effect could not depend on the sedative influence of the drug in the heart and arteries, he showed, by various experiments and observations, that the arrest of the hæmorrhage was due to the action of the digitalis on the ganglia of the uterus, by which the organ was stimulated, and the muscular substance powerfully contracted.—*Dub. Hospt. Gaz.*

Does Ergot, when Administered during Labor, injure the Fœtus?—Dr. R. U. West has, in the *Medical Times and Gazette*, tabulated sixty-nine cases of labor, in which Ergot of Rye was administered. The following are a portion of his remarks in relation to this question:

With reference to the probability of the ergot causing the death of the fœtus, I may observe that, in the whole number of 69 cases, there were 9 still-births, viz., in cases 2, 5, 16, 19, 23, 33, 39, 56, 67. All the other children were born more or less lively and vigorous. Of case 25, where the fœtus survived its birth only half-an-hour, I ought to observe that the mother usually gave birth to still-born or similarly feeble children. Certainly, her three previous children were in this condition, no ergot having been given. From this list of 9 still-births we may at once exclude cases 19 and 33, the putridity of the fœtuses in these two cases having proved that they had died some days before the commencement of labor. Cases 5 and 39 were attended with considerable hæmorrhage during or immediately preceding the labor, a circumstance of itself quite sufficient to account for the death of the children. In case 67 the death of the child was undoubtedly caused by pressure on the funis during the difficult delivery of a hydrocephalic head in a case of feet presentation. Four still-births remain to be explained, viz.: in cases 2, 16, 23, and 56. Do the cases just referred to, when compared with the large number in which, under all sorts of unfavorable circumstances, and with a duration of the labor process, under the influence of the ergot, varying from a quarter of an hour to three and four hours, the fœtus was born lively and vigorous, prove anything whatever against the ergot of rye? I certainly think not.

COMMUNICATIONS AND EDITORIAL.

Successful Case of Ovariotomy. By EZRA P. BENNETT, M.D.—We have received a letter from Dr. Bennett, of Danbury, in which he states that he has again operated for ovariotomy, with perfect success. The patient, he says, has recovered without a single unpleasant symptom. "She was an unmarried lady, 23 years of age, of good constitution. The disease was of ten years standing, and the sac, with its contents, weighed twenty lbs. She had never been tapped, which I considered a fortunate circumstance, as I consider the chances of adhesion and subsequent inflammation much less than after tapping. There is, also, more strength to endure the shock of the operation, previous to tapping. Another important consideration in menstruating females is, to operate just after the menstrual flow, when the uterine organs have been thoroughly depleted by this secretion. The operation was performed in the usual manner, with some few exceptions. I made a small incision, three inches only in length—drew out a portion of the sac, and punctured it first with a trocar, then with a knife, and then turned my patient over on to her face, on the side of the table, and in this way facilitated the removal of the contents of the sac. I tied the pedicle with a double ligature, and brought it out at the inferior angle of the wound. I intended, before operating, to dissect off the Fallopian tube, but I found it so vascular that I deemed it unsafe, and, therefore included it in the ligature. The wound was dressed in the usual manner. The patient was enjoined strict regimen, quiet, and with sufficient morphia to allay pain and irritation. Her convalescence was remarkably rapid."

Vaginal Hysterotomy twice successfully performed on the same patient.—Reported by M. C. HOSBROUCK, M.D., of Rockland Co., N.Y. The following letter has been received from Dr. H., which we deem worthy of publication.—[EDS. *N. Y. Jour. of Med.*]

GENTS.—I have been induced to send you the following, by reading in the second edition of Dr. Bedford's "Clinical Lectures," a case of Hysterotomy, which he has published for the second time; remarking, "I am not aware that this operation has ever been performed in this country; at least, I have found no record of it." This may be true, so far as the records go; but Dr. A. Cornelison, of Rockland Co., now deceased, assisted by Dr. Polhamus, performed it twice on the same patient, as far back, if I recollect rightly, as 1835. The leading circumstances of the case, as I received them from the doctor himself, were these. A female, aged about twenty years, was taken in labor with her first child, and, expecting to be delivered without assistance, did not send for the doctor until her sufferings became so severe that she could no longer endure them. An examination discovered a large tumour, supposed to be the head of the child, and so low down as to distend the perinæum, but covered entirely by the uterus and posterior wall of the vagina. For some time no os could be found; but it was finally detected, high up, under the symphasis, hard, and entirely closed. The pains and propulsive efforts of the woman were so severe,

that it seemed as if the child, uterus, vagina, and all were about to be forced into the world. The doctor held back with all his might, and, during a short remission of the uterine efforts, made an incision through all the parts, sufficiently large to allow the child to pass, and through this opening, almost immediately, the woman was delivered of child and secundines. She rapidly recovered, and again became pregnant; and, under precisely similar circumstances, was again delivered in the same manner; and recovered. The incision was made the second time, on the line of the cicatrix of the first, which could be plainly felt. It will be seen that this is a case, not precisely similar to Dr. Bedford's. It was not known that any previous injury had been inflicted, and, although no opening could be discovered in the os, one undoubtedly existed, sufficiently large to transmit the catamenia, as evinced by a second pregnancy. The operation, too, was rather more formidable, at least for the patient,—whether we consider the length of the incision, or the parts divided; and from the same considerations, and the fact of a repetition of the operation, the recovery was more remarkable. I think the case, by itself, of sufficient importance for publication; and whilst putting in this small claim for our obscure little County, believe it the farthest from me to desire to detract, in the least, from the honors of Professor Bedford.

American Medical Association.—The following notice has been put forth relating to the next Annual Meeting of the Association:

The Ninth Annual Meeting of the American Medical Association will be held in the City of Detroit, Mich., on Tuesday, May 6, 1856.

The secretaries of all societies and other bodies entitled to representation in the Association, are requested to forward to the undersigned, correct lists of their respective delegations, *as soon as they may be appointed;* and it is *earnestly* desired by the Committee of Arrangements, that the appointments be made at as early a period as possible.

The following extracts are from Article 2nd of the Constitution:

"Each local society shall have the privilege of sending to the Association one delegate for every ten of its regular resident members, and one for every additional fraction of more than half this number.

"The Faculty of every regularly constituted Medical College or chartered school of medicine, shall have the privilege of sending two delegates. The professional staff of every chartered or municipal hospital, containing a hundred patients or more, shall have the privilege of sending two delegates; and every other permanently organized medical institution, of good standing, shall have the privilege of sending one delegate.

"Delegates, representing the Medical Staff of the United States Army and Navy, shall be appointed by the Chiefs of the Army and Navy Medical Bureau. The number of delegates so appointed shall be four from the army medical officers, and an equal number from the navy medical officers."

William Brodie, M.D., Detroit, Mich.,
One of the Secretaries.

College of Physicians and Surgeons.—Since our last issue the new building of this institution, at the corner of Fourth Avenue and Twenty-third Street, has been inaugurated, and opened for lectures. The exercises for this purpose took place on the 22nd of January. The opening address was delivered by Edward Delafield, M.D., Emeritus Professor of Obstetrics, and was characterized by much historical taste, and an ardent zeal for the interests of medical education in this city. We understand that Dr. Thomas Cock, former Vice-President of this College, has been appointed President, Vice—Prof. Alex. A. Stevens.

OBITUARY.

Death of Dr. S. W. Williams.—Died at his residence, at Laona, Ill., on the 14th of July last, Stephen W. Williams, M.D., aged 65 years. For forty years Dr. Williams was a distinguished practitioner of his native town, Deerfield, Mass. In the autumn of 1853 he removed to Illinois, where he continued to reside until his death. To the readers of this Journal he was known, by his numerous practical contributions to its pages; and to the profession generally, by his varied historical, biographical, and literary writings, which alike honor their author and adorn medical literature. In the language of a cotemporary, "he died as he had lived, beloved and respected by all who knew him." In a future issue we hope to be able to present our readers with an extended biography of the deceased.

Death of Dr. Jesse Chickering.—Died at Jamaica Plain, Mass., on the 29th of May last, Jesse Chickering, M.D., aged 57 years. Dr. Chickering will long be remembered as an able and enlightened statistician. In his early studies he prepared for the ministry; but, after leaving college, commenced the reading of medicine, and received the degree of M.D., from the Medical Department of Harvard University in 1833, having presented, for his inaugural thesis, a dissertation on "Scarlet Fever." He entered upon the practice of medicine in Boston, and continued in the profession for ten years; when, finding its duties to interfere with the exercise of his studious desires and habits, he retired from the active exercise of the same, and devoted himself to the preparation of statistical reports, works, etc. As the fruit of his labors in this department of vital statistics, we need only mention his elaborate work on the *Population of Massachusetts, from* 1765 to 1840, and that on *Immigration into the United States*, which was published in 1848. He contributed largely to various periodicals, and rendered essential service to the Senate Committee that arranged the details of the last U.S. census. As before stated, he was a learned and enlightened statistician. Few persons could be in his society without receiving instruction. He was a student in the fullest acceptation of the term, and carried an enthusiasm into his work that was truly remarkable.

PLATE 1ST LOWER JAW AFTER REMOVAL.

Lith. of Sarony & Cº New York

a, b, Points where the body of the Jaw was divided
c, Right Condyle & angle in a state of Necrosis
d. Left Condyle ramus &c with healthy bone covering the Sequestrum

PLATE 2º APPEARANCE OF PATIENT AFTER THE OPERATION.

LITH. OF SARONY & Cº NEW YORK